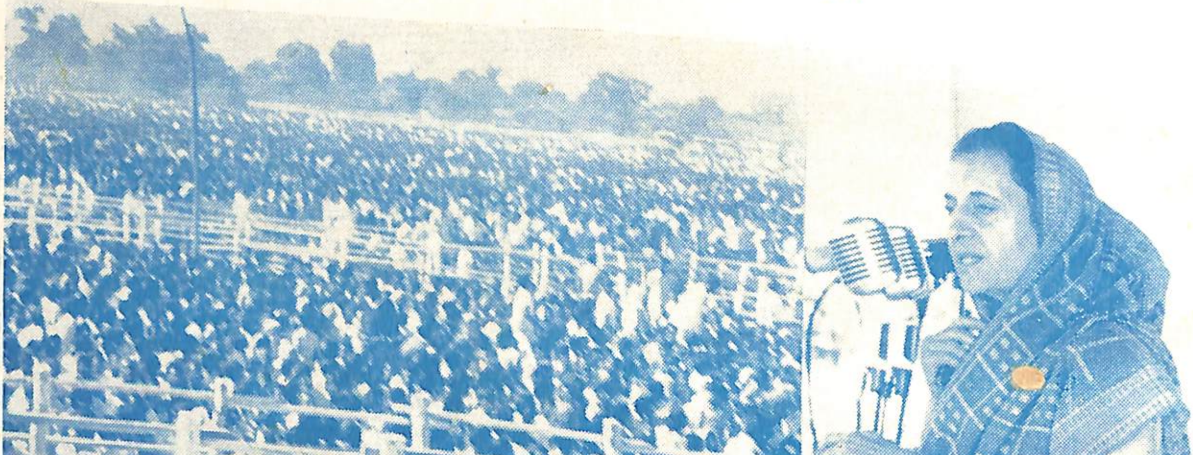
REPUBLIC DAY SPECIAL, JANUARY 1977

ORISSA REVIEW

THE FOUNDATION STONE
OF
WATER AQUACULTURE RESEARCH AND TRAINING CENTRE
DHAULI, ORISSA
E CENTRAL INLAND FISHERIES RESEARCH INSTITUTE
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)
BY SMT INDIRA GANDHI PRIME MINISTER OF INDIA
ON 3RD JANUARY 1977

Smt. Indira Gandhi, Prime Minister of India laying the foundation stone of Freshwater Aquaculture Research & Training Centre at Dhauli, Bhubaneswar (Orissa) on January 3, 1977



Prime Minister, Smt. Indira Gandhi addressing a mammoth gathering of tribals at Rairangpur in Mayurbhanj District on January 4, 1977

ORISSA REVIEW

January 1977
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ORISSA REVIEW seeks to provide a condensed record of the activities and official announcements of the Government of Orissa and other useful information. Many items appear in summarised form. Such items should not be treated as complete and authoritative versions.

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A NEW YEAR'S MESSAGE

Freedom from fear is the freedom I claim for you, my Motherland!—fear, the phantom demon, shaped by your own distorted dreams;

Freedom from the burden of ages, bending your head, breaking your back, blinding your eyes to the beckoning call of the future;

Freedom from shackles of slumber wherewith you fasten yourself to night's stillness, mistrusting the star that speaks of truth's adventurous path;

Freedom from the anarchy of a destiny, whose sails are weakly yielded to blind uncertain winds, and the helm to a hand ever rigid and cold as Death;

Freedom from the insult of the dwelling in a puppet's world, where movements are started through brainless wires, repeated through mindless habits, where figures wait with patient obedience for a master of show to be stirred into a moment's mimicry of life.

Rabindranath Tagore

सत्यमेव जयते

RAJ BHAVAN
BHUBANESWAR

January 22, 1977

Governor's Republic Day Message

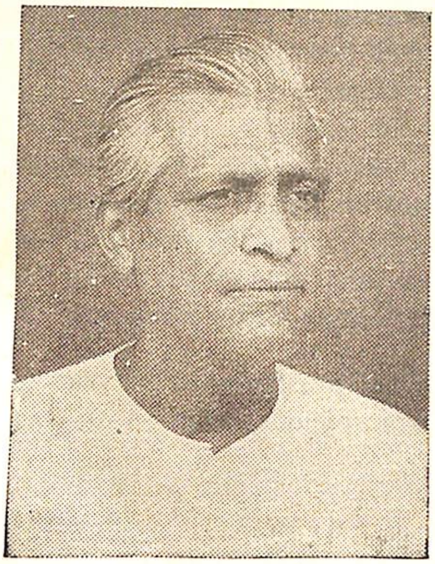
On this auspicious occasion of the 27th anniversary of our Great Republic, on behalf of the Government and on my own behalf, I offer my warmest greetings and best wishes to the people of Orissa.

During the last one year, the country has made remarkable progress in the implementation of the 25-Point Economic Programme which received whole-hearted support of the people. Recently, we have introduced meaningful changes in the Constitution which would enable us to bring about radical transformation in our economic condition and ensure stability of the country.

We have suffered a severe spell of drought in this State, but I am confident that the Government is taking all possible steps to ameliorate the distress. We shall succeed in getting over this temporary phase by our collective effort. I have faith and confidence in the leadership of those responsible for the implementation of the development programme and the capacity of the people to circumvent the temporary distress by hard work and determination.

I wish success in all our endeavours for the welfare of the State which can be achieved under the dynamic and constructive leadership of the new Chief Minister and the Government with the co-operation of the people.

JAI HIND
SHRI JUSTICE S. N. SHANKAR
Governor of Orissa



सत्यमेव जयते

BHUBANESWAR
January 22, 1977

Chief Minister's Message

I extend my warmest greetings and good wishes to the people of Orissa on the happy occasion of the celebration of the 27th Anniversary of our Republic.

The year that has gone by has been one of remarkable achievements in different fields about which all of us can take just pride. Thanks to the continuance of the emergency which, of course, has progressively been relaxed, anti-social activities had been curbed and economic buoyancy achieved. The Orissa Government, along with the rest of the country, has pledged itself to implement vigorously the 20 and 5 point programmes. I am confident that the people in general and the Youth in particular will give their unstinted co-operation to Government and voluntary organisations in rooting out such social evils as casteism, dowry system and bonded labour. Now, there is greater need than ever for speeding up the implementation of the programmes specially designed for the improvement of the lot of our Adivasi and Harijan brethren who constitute nearly forty per cent of the State's population.

The food situation in the State, as you know, is not very happy on account of the failure of the khariff crop due to widespread failure of rainfall. There is, however, no need for any apprehension as the State and the Centre have sufficient foodgrains at their disposal to tide over the difficult months ahead. I would, however, appeal to you for your full co-operation in ensuring that the price line is maintained and the supplies reach the really needy people. There is need for disciplined consumption so that our people get their due share of the foodgrain pool in the State.

The Prime Minister has once again demonstrated her abundant and abiding faith and confidence in the functioning of democracy in our country by calling upon the people to elect a new Lok Sabha in March. It is now for the people of our State to prove that they can elect their representatives to the Parliament in a peaceful and orderly manner. May I also take this opportunity to appeal to all recognised political parties and prospective candidates to eschew recrimination and rancour during the elections, and concentrate only on explaining their policies and programmes before the electorate which is already well aware of what is good for the country.

There is every hope and sign of progress and prosperity in the years to come. Let us rededicate ourselves on this auspicious occasion to the service of the Nation.

JAI HIND

BINAYAK ACHARYA
Chief Minister, Orissa

SOCIAL INERTIA

Dr. B. Misra

In spite of abundant resources, the people of Orissa still continue to be poor. The *per capita* income at current prices is a little more than Rs. 500·00 per year. There are about 64 per cent of people in Orissa who are below the poverty line. This is a staggering figure. Industrial development is yet to change the economic landscape of the State. Agriculture which is the mainstay of the people is in a primitive condition. Though it provides about 51 per cent of State's domestic product and employs about 80 per cent of the workers there is hardly any breakthrough in agriculture. To a considerable extent agriculture in Orissa means the growing of paddy, which occupies 70 per cent of all cropped hectares. But the productivity of paddy per hectare is staggeringly low; peak achievement has never exceeded 1·5 tons of paddy per hectare.

There are certainly many economic factors which impede economic growth in Orissa. For example, investible resources are not adequate for a 'big push', the 'critical minimum effort' is necessary to initiate a process of rapid change. Population growth is terribly high; it is even more than the increase in food supply for year. Development of economic overheads is negligible. But to crown all, there is an endemic cause of low *per capita* productivity and income lying in prevailing social attitudes and institutions. The people of Orissa have not learned the 'economic' attitudes that foster rapid economic change. Orissa is traditional in traditional societies. Instead of technology-conscious farmers, agriculturists in Orissa are tradition-bound peasants. Instead of disciplined workers, we have a vast army of reluctant and untrained labourers. Instead of production-minded businessman, we have trading oriented merchants. An equally crippling attitude is evidenced by the upper classes who look with scorn or disdain upon business or production oriented careers. All these attitudes give rise to a social *Inertia* that poses a tremendous hurdle to economic development. We therefore refer to some of these in the following paragraphs for a clear prospective of Orissa's cultural and social background in relation to economic growth.

To begin with, we have a large population of tribal and scheduled caste people, constituting about 40 per cent of the total population. Their attitudes, cultural practices and production patterns are not conducive to economic growth. Many of the tribals are engaged in shifting cultivation which not only deteriorates the fertility of the soil, but reduces the total flow of agricultural commodities in the State. These tribals are honest, faithful and loyal but due to age old poverty, social stratification and exploitation, they have almost lost their vitality. Tribal and scheduled caste people who are concentrated in certain regions of the State drag down the level of the economy of the State. They do not have any enterprise.

Even in other parts of the State where there is not much of tribal population, there is hardly any enterprise. The princely States which were merged with Orissa in 1948 were outside the boundary of economic enterprise. Even after merger, economic motivations did not influence their life. In fact, Orissa is a rural State where more than 90 per cent of people live in rural areas. There are less than 100 towns in Orissa of which many of them are expanded villages without having even the comforts of village life. Attitudes in most parts of Orissa are characteristically primitive; there is hardly any desire to change or effort to improve one's own condition. Orissa lacks enterprise.

Another feature which impedes economic motivation in Orissa is lack of integration between rural and urban life, between agriculture and industry, between educated elite and the ignorant mass. There is almost a dual economy in the State which is characterised by a difference in social customs between the subsistence and exchange sectors of an economy, a gap in the levels of technology between the rural subsistence sector and the industrial monetised sector and considerable difference in the level of *per capita* income between different regions. In Orissa, the monetary sector cannot exceed more than 60 per cent of the economy. Without the growth of money economy, it is difficult to envisage much change in the economy. It is not easy to alter the traditional way of life by providing economic incentives when the economy does not respond to monetary incentives. Similarly, dualism prevents widespread application and rapid assimilation of technical progress throughout all sectors of the economy. We have two sectors of the economy in two fields, in one primitive technology which hardly brings about any change in the productive process and in another sophisticated technology for which our capacity for absorption is negligible. Because of the primitive technology, growth in the productivity of the agricultural sector is of the order of second importance but what is more important is that it drags down the promising industrial sector due to technological barriers caused by frequent breakdowns, heavy wear and tear and lack of adequate skill for repair. It is not possible to part a jet plane over a bullock-cart. Dualism in fact impedes growth in both sectors.

This process brings about a spatial difference in a wide variety of development indices including *per capita* income, rate of growth of industrialisation and trade, employment growth rates and levels of unemployment. Gunnar Myrdal argues that the process of circular cumulative causation tends to bring about disequilibrium by widening inter-regional differences in development. The hypothesis implies that spatial dualism tends to strengthen the disequilibrium by leading to cumulative expansion in the favoured region at the expense of other regions, which then become comparatively worse off retarding their future development. What Myrdal has in mind is a type of multiplier-accelerator mechanism producing increasing returns in the favoured region and decreasing returns in the unfavoured region. He has given the example of 'spread effect' and 'back wash effects'. In developed countries, where the integration between different regions is close, the spread effect is wider, there is easier transmission of knowledge, technology and greater scope for change of attitudes and institutions for bringing about a quick development. Skilled labour, capital and technology which help in the process of change spread to backward areas and thus promote all round development. But in backward States like Orissa, backward regions are denuded of their capital and enterprise, causing development differences in general to persist or even diverge. Myrdal therefore points out that the spread effects' are weaker than the 'back wash effects' causing there by expanding regions to expand by inducing improvements in transport and communication, education and health facilities etc., improving efficiency and productivity and widening still further the competitive advantage of the growing region over the lagging regions experiencing out migration of the factors of production.

All this implies that if we have a primitive peasantry which is fearful of change lest this might reduce their slim margin which sustains their life, a work force which does not respond to monetary incentives and a privileged class which is interested to lead a leisurely and secure life; we cannot remove the handicaps that impede change. Economic change implies modernization and modernization implies a change from traditional habits, customs, institutions and attitudes. A new culture based on scientific temper will not only improve the quality of life, but will also create the necessary environment for economic well-being.

Dean, Orissa University of Agricaltural
& Tech., Bhubaneswar

ASSISTANCE TO THE COLLIERS FAMILIES

This is published for information of the general public that in the Chasnalla Colliery disaster which took place on the 27th December 1975, workers belonging to different States of India lost their lives. Government of India have been trying to provide short-term and long-term relief and rehabilitation facilities to the family members of the deceased workers. The question of giving facilities, concessions and financial assistance to the families of the victims of the disaster belonging to this State who want to settle down in this State and return to their home was under consideration of the State Government for some time past. The State Government have since decided to give homestead land to the extent of 0·05 acre per family free of cost, employment to the extent possible under the State Government/public sector undertakings to all dependants above 18 years of age and free education facilities to the children of the affected workers. Besides, the State Government have also decided to give financial assistance to the extent of Rs. 1,000 per family of the workers who lost their lives in the said disaster.

ORISSA STATE ELECTRICITY BOARD

INVITES

Prospective Entrepreneurs to set up

More and more Industries in the State with assured power supply in abundances. We are now exporting surplus power to the tune of 100 MW. to the neighbouring States of Bihar and Andhra Pradesh.

We assure you sufficient power supply from reliable grid having Hydro and Thermal Stations at comparatively favourable tariff.

Steps in a bigger and determined way are being taken to help progress Small-Scale Industries in the State.

We have extended power support of 60 to 80 MW. to HSL, Rourkela to supplement their generation of 60 to 70 MW. and committed further supply for their expansion programme.

Power supply to other basic Electro Metallurgical, Electro Chemical Industries, Ferro-Chrome, Ferro-Silicon, Ferro-Manganese, Caustic Soda, Cement Factories, Paper Mills, etc. have been given to exploit the natural, mineral and other resources of the State for meeting the production demands of the country.

SALIENT FEATURE

Our present installed capacity—801 MW.

New Power Projects already taken up :

1.	T. T. P. S. Expansion	220 MW.
2.	Balimela Hydro-Power Station (Units V and VI)	120 MW.
3.	Rengali Hydro-Project	100 MW.
4.	Upper Kolab Hydro-Project	240 MW.
	Total ..	680 MW.

POWER CONSUMPTION INSIDE THE STATE

Power sold during 1974-75 1995 Million Units

RURAL ELECTRIFICATION

We have so far electrified more than 11,000 villages during the last five years.

ELECTRICITY IS KEY TO PROSPERITY
HELP US TO SERVE YOU AT ALL TIMES

ORISSA STATE ELECTRICITY BOARD
BHUBANESWAR-751007

OUR ACHIEVEMENTS IN HEALTH

During pre-independence days our State was regarded as a "Backward Province" due to poverty of our masses. Even after independence our State was still backward in comparison to many other States of India. But due to vigorous policies of our leaders, the economic condition of our people started improving gradually, accompanied by developments in the field of Health and Education. Developments in Public Health was perceived by our National leaders as a part of total upliftment of our people under the Community Development programme. Only 25 years ago, the State had a few hospitals and dispensaries located in towns and district headquarters. But after introduction of planned projects (Five-Year Plans) there was a strong attempt to eradicate common diseases and to provide medical-care at the door step of our rural population, deprived of such facilities so far. Though there was a steady development in this field for last 15 years, recently this march for advancement has taken a big step forward. If we review our activities for last one year, one can easily comprehend what our Government and leaders trying strenuously to achieve for the benefit of our people.

1. Hospitals and Dispensaries :

A. Improvement of District Headquarters Hospitals—At present there are only 1,420 beds in the District Headquarters Hospitals. To provide more treatment facilities to our people, it is proposed to increase the bed strength in the District Headquarters Hospitals. A sum of Rs. 81·68 lakhs is proposed to be spent during 5th Plan Period in this regard which includes provision of more beds in these hospitals. In order to improve the quality of Medical care in these hospitals there has been already provision for specialist services. During last year, a sum of Rs. 18·6 lakhs have been provided for the purpose.

B. Augmentation of Medicines grant to the Public Health Centre—The drug supply for each Primary Health Centre was worth of Rs. 4,000 only. This was felt inadequate for the purpose. A sum of Rs. 125·60 lakhs have been provided in the 5th Five-Year Plan to provide Medicines worth of Rs. 8,000 to each Primary Health Centre per year over and above the existing provision of Medicines.

C. Up-gradation of Primary Health Centre—In order to provide better Medical facilities in our rural areas, it is proposed to up-grade 77 Primary Health Centres into Rural Hospitals during the 5th Plan Period. For this up-gradation work a sum of Rs. 827·30 lakhs have been provided for the 5th Plan period.

D. Establishment of Medical Aid Centre—A sum of Rs. 4·4 lakhs have been provided during the year 1975-76 for establishment of 20 Medical Aid Centres in the State. These Medical Aid Centres have already been established.

E. Laboratory Services in Primary Health Centre—A sum of Rs. 2 lakhs have been provided to create laboratory facilities in 60 Primary Health Centres.

2. Different Public Health Programmes :

A. Prevention of Food Adulterations—With a view to preventing adulteration in food, the strength of Food Inspectors have been increased by appointing 20 whole-time Food Inspectors, over and above 30 part-time food Inspectors of Gazetted status previously working in the State. By these additional Food Inspectors, inspection of food stuffs, collection of food samples and prosecution of defaulters have been easy. There is a food testing Laboratory (Public Health) located at the State Headquarters where examination of food samples are conducted. There is a proposal to provide facilities for examination of food samples in the Regional Public Health Laboratory. During this year, 1,003 food samples have been examined and out of which 464 found below standard. Disciplinary actions have been taken against offenders.

B. Actions for Cholera Control—A Cholera-Combat-Team for the district of Puri has been created during the last year. The State Government have sanctioned funds in this regard, which supplimented the Central grant in shape of materials and equipments for implementation of this programme. This year an additional Cholera-Combat-Team has been created which is functioning at Cuttack.

C. Small-pox Eradication Programme—Under Small-pox Eradication Programme, there are 1,381 Vaccinators, 329 Supervisor Sanitary Inspectors and 45 Para Medical Assistants are working in the field to detect Small-pox cases and to take preventive measures through vaccination against Small-pox. This State is free from Small-pox since the 16th February 1975. Considering the need to detect any hidden Small-pox cases imported from other States. It has been decided by the Government of India to raise the reward of Rs. 1,000 for the first informants of Small-pox cases. The decisions has been put into effect from the 1st January 1976 to September 1976. 418,506 Primary Vaccination and 1,622,081 Re-Vaccinations were conducted in the State.

3. Medical Education

A. Creation of a separate Directorate of Medical Education and Training—Due to fast growing Medical and Public Health Institutions in the State, it was necessary to train a large number of Medical and Para Medical personnel for service to our people : Besides, to raise the standard of medical care facilities in the State specialisation in each branch of Medical Service was also necessary. In view of increasing importance of Medical Education and Training, the State Government decided to create a separate Directorate for the purpose. Additional staff and expenditure for the purpose has been sanctioned during the year, 1974-75 and this Directorate has started functioning already.

B. Improvement of M. K. C. G. Medical College and Hospital at Berhampur—The M. K. C. G. Medical College and Hospital at Berhampur which had started functioning from the year, 1961-62, has been improved to a considerable extent during the plan periods in respect of construction of buildings for College Hospital and Staff Quarters.

The College has an annual admission capacity of 100 and a bed strength of 700 for patients. For the year, 1974-75 an amount of 9·36 lakhs rupees was allotted for this Medical College to provide additional staff and equipments and for completion of incomplete buildings. Amongst the activities undertaken in this regard, provision of cobalt unit and construction of Radio Therapy building were given priority. A sum of rupees 12 lakhs have been provided during 1975-76 for continuance and creation of additional staff and building.

C. Improvement of V. S. S. Medical College at Burla—The V. S. S. Medical College at Burla was established in the year, 1959. The present annual intake capacity of this College is 100 and bed strength of the attached hospital in 700. A sum of 12·36 lakhs was provided for this college and Hospital for further improvement in the year, 1974-1975. During this financial year, a sum of Rs. 10 lakhs have been provided for creation of additional posts and construction of one 100 bedded obstretion and gynaecology ward.

D. Improvement of S. C. B. Medical College and Hospitals at Cuttack—The total bed strength of this College Hospital is 1,090 and annual in-take of students is 100. An amount of 10·10 lakhs was provided during the year 1974-1975, for improvement of this institution. During current financial year, a sum of Rs. 10 lakhs has been provided for creation of additional posts and construction of Medical Ward and Surgical Block.

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Courtesy :

Directorate, Medical Education
& Training, Orissa

(Health Education Bureau)

INDUSTRIAL PACKAGE PROGRAMME IN THE DISTRICTS OF ORISSA

The Package Assistance Campaign was held at Bhawanipatna during last October to assist the local entrepreneurs for establishing the industrial units. 79 entrepreneures from the districts of Kalahandi and Koraput were identified at the time of whom 54 parties applied for financial assistance. Their cases are being scrutinised by the Orissa State Financial Corporation and Lead Bank of the district for financial help.

Similarly, a campaign was held at Bolangir during the said period where more than one hundred entrepreneurs from Bolangir and Sambalpur districts participated. Of these, 41 parties applied to the O. S. F. C. and Lead Bank for financial assistance and 33 parties applied for registration of their proposed units.

INSTITUTIONAL FINANCE
IS OPEN FOR YOU

It is the time to go for a boat of your own

AND

Join the 'Blue Revolution'
in the Coast of Orissa.

For particulars please contact your nearest District Level Fisheries Officers

DIRECTORATE OF FISHERIES, ORISSA
CUTTACK-753007

UNIVERSITY LEVEL BOOK PRODUCTION IN ORIYA

Dr. Gadadhar MIsra

Language Policy of the Government :

Language, as a medium of instruction, has engaged the attention of all thinking men of our country. For a variety of reasons, educational, cultural and political, the Education Commission (1964—66) strongly advocated the development of a proper language policy for India. They regarded the development of regional languages as vital to the general progress of the country; they considered it a major step towards the improvement of quality in education.

Conference of Vice-Chancellors :

The conference of Vice-Chancellors of the Universities of India, 1967 firmly pleaded for the energetic development of Indian languages and literature towards the promotion of higher education and of national culture. The conference endorsed in general, the recommendations of the Education Commission with regard to changeover in the medium of education.

National Policy on Education :

The Government of India in their Resolution on the National Policy on Education, 1968 stated:

> "The energetic development of Indian languages and literature is a *sine qua non* for educational and cultural development. Unless this is done, the creative energies of the people will not be released, standards of education will not improve, knowledge will not spread to the people and the gulf between the intelligentsia and the masses will remain, if not widen further."

Parliament Resolution on Language :

Eighteenth January, 1968 is a historic date for India. On this date both the Houses of Parliament adopted the Government Resolution on the Language Policy. The Resolution urged for taking wholesome measures for the full development of all the 14 major languages of India, besides Hindi in the interest of the education and cultural advancement of the country. The resolution further enjoined upon the Government to prepare and implement a programme, in collaboration with the State Governments, for the co-ordinated development of all these languages so that they grow rapidly in dynamism, maturity and richness to become adequate and effective media of communicating modern knowledge.

Programme of the Union Government :

In pursuance of these directives on language policy, the Union Ministry of Education and Youth Services launched a massive programme of production of University-level books in Indian languages to facilitate a smooth change-over in the media of instruction in higher education. The Programme envisaged a Central grant of rupees one crore to be spread over a period of six years to each of the State Governments except Nagaland and Jamu & Kashmir (and except the Union Territories) towards production of university-level books in the regional languages. During the first year, i. e., 1968-69, the Government of India made on-account grants on a matching basis, the State Government sharing 25 per cent of the expenditure. From 1969-70 onwards, however, these grants have been made on a hundered per cent basis.

Formation of the Orissa Text-book Bureau :

To help the State Governments formulate their book production programmes and effectively implement them, a set of guidelines were prescribed by the Union Ministry of Education and Social Welfare. In accordance with the guidelines, the Government of Orissa formed an autonomous board known as "The Orissa State Bureau of Text-book Preparation and Production" (under the Societies Registration Act, 1960) on the 11th March, 1970.

Aims and objectives of the Bureau :

The aims and objects for which the Bureau is established are as follows :

(*a*) To aid and promote advancement of education in general.

(*b*) To produce text-books, hand-books for teachers, work books for pupils and other educational literature useful for furtherance of teaching or learning in educational institutions and for producing books for higher education in the regional language of Orissa.

(*c*) To encourage and procure expert authors having knowledge and experience to write text-books in Oriya or translate authentic books into Oriya on various subjects suited to requirements of the curricula and syllabi prescribed by Government or other appropriate authority in that behalf for various courses of education and to apply for and obtain the approval or sanction of Government or other appropriate authority hereto.

(*d*) To undertake research in text-book production and ancillary aids and education literature concerning the various methods of education and aids for education and otherwise directed towards securing improvement in the general educational standard.

(*e*) To frame, develop and recommend to the Government and other appropriate authorities curricula and syllabi for the purpose of improvement in the general educational standard.

(*f*) To establish and maintain libraries to facilitate research in general and in curricula, syllabi and text-book production in particular.

(*g*) To stock, utilise and account for the gift paper received through Government of India or the Government of Orissa.

(*h*) To implement any scheme for free supply of books.

Universities in the State, their media of instruction and examination :

There are four universities in the State. Utkal University, the oldest and the largest, has already introduced regional language, along with English, as the media of instruction and examination at Intermediate and Degree level. Berhampur University has followed suit. Sambalpur University has permitted the candidates to write their answers, in the regional language at the Pre-University examination and the Orissa University of Agriculture and Technology are actively considering the the switch-over.

Grants Received :

During the last seven years, the Bureau has received an amount of Rs. 46·50 lakhs from the Government of Orissa, who in their turn have received Rs. 41·50 lakhs from the Government of India.

Expenditure incurred by the Bureau :

The total expenditure incurred by the Bureau on organising orientation courses, on preparation and production of books, on the library, on administration, etc., comes to Rs. 44·87 lakhs till 31st Mrach 1976.

Preparation of Glossaries :

In the preparation of text books the paucity of apt technical words in the regional language stood as a stumbling block. The necessity of preparation of Glossaries in different subjects as standard guide and help-book in the preparation of text-books was, therefore, urgently felt. with considerable efforts large number of technical words in the regional language were coined to the acceptance of all. Glossaries in Education, Commerce, Botany, Zoology, Economics, Agriculture. Civil Engineering, Electrical Engineering. Electronics Engineering, Mechanical Engineering, Chemical Engineering and on General Science have already been prepared. Glossaries in other subjects are in the process of brisk preparation.

Preparation of Books :

The next task was the preparation of University level books in the regional language. To start with Expert Committees were constituted in each subject. The Expert Committees selected the titles of the books to be published. Authors were also recommended by them and finally appointed by the President of the Bureau. In the earlier stages of the establishment of the Bureau, the progress of writing was rather slow. Hence the Bureau decided to open 'Subject Cells' and recruited a few senior and junior writers and they were entrusted with the work of writing books on whole-time basis. Manuscripts came flowing from the outside authors as well as from the 'Writers' Cell'. After the manuscripts are submitted by the authors, they are reviewed by an expert member on the subject selected by the Expert Committee. Then the books pass through the hands of a Language Expert before they are sent to the press.

The number of books published so far stands at 161 : for Intermediate classes 46 books, for degree classes 94 books, in Agriculture 8 books and in Engineering 5 glossary books and in general subject 8 glossary books.

Library :

Writers who are assigned topics to write books want reference books from the Bureau. To help them the Bureau has organised a small Library of its own. The expert members in each subject, while deliberating over the coining of suitable words for the Glossaries, derive immense benefit from the books and dictionaries that are in the Bureau Library. The library now contains 3,274 books valued Rs. 61,363·60. This is just a modest beginning. A well-stocked library in all subjects with a wide choice of lexicons is a primary need for the type of work the Bureau undertakes.

Book Exhibition :

In order to make the publication of the Bureau popular among the consumers, i.e., college teachers and students, and to facilitate their wide sale, exhibitions are frequently organised in the educational institutions.

Future work in hand :

The Bureau has a target of production of 700 titles by the end of the Fifth Plan period. They are in different stages of preparation.

To get education in the regional language up to the highest level in all branches of learning is but a natural right of the people of a free country. Under the aegis of the State Government and Union Government, with the guidance of the Universities and other such academic bodies and with the active co-operation of teachers and pupils, the Bureau hopes to shoulder its share of responsibility in this national endeavour.

◆

Director, Orissa State Bureau of
Text Book Preparation and Production, A/125, Saheed Nagar,
Bhubaneswar-751007.

CO-OPERATIVES RECORD LAUDABLE PROGRESS

The membership of Co-operatives in Orissa touched a new high at the end of the Co-operative Year 1975-76 with 20·27 lakhs on the roll covering 55 per cent of the rural households, according to an official review.

The drive for enrolement of new members of Co-operatives during the year 1975-76 was crowned with success and the target of 1·26 lakh members for that year was more than doubled, the achievement being 3·17 lakh members.

It may be recalled that the total membership of the Co-operatives at the beginning of the Co-operative year 1974-75 (up to end of June, 1975) was 17·10 lakhs.

THE ROLE OF THE CENTRAL RICE RESEARCH INSTITUTE, CUTTACK

Shri N. K. Chakrabarti

In view of the pivetal role of rice in the agricultural economy of India, the Government of India established the Central Rice Research Institute at Cuttack in 1946. Subsequently, in 1966 the Institute was transferred under the administrative control of the Indian Council of Agricultural Research.

It is located at Cuttack (22° N, 86° E) 254 miles South of Calcutta, in the State of Orissa which is in the main rice growing tract of the country. The main objectives of the Institute are:

* To carry out research on basic and applied aspects in all disciplines of rice culture, in order to derive ways and means of optimising hectare yields of rice.

* To generate information for planning adaptive research in the rice growing tracts in the country before putting up specific recommendation for use by rice farmers.

* To serve as a centre of authoritative information on matters concerning rice productions, protection and conservation.

* To train research and extension workers.

The Institute has 9 main Research Divisions: Plant Breeding and Genetics, Soils, Agronomy, Plant Physiology, Plant Pathology, Entomology, Bio-Chemistry and Rice Technology, Agricultural Engineering, Agricultural Economics and Statistics. The current research projects cover both fundamental and applied aspects; the latter being problem oriented with the multi-discipline participation.

The main line of research are :

(i) *Breeding, Genetics, Cytogenetics and Mutation*—Collection, maintenance and assessment of rice germ plasms; Varietal improvement—development of very early and early varieties with drought telerance for rain-fed upland areas, medium and late varieties for medium low lands and relatively water-logged areas, cold tolerant varieties for rabi cultivation, multi resistance lines (in collaboration with Pathology and Entomology Divisions), high protein lines, scented varieties with high yield potential.

Genetics and Cytogenetics—The inheritance of qualitative and quantitative characters, linkage relationship of genes, induced mutation, the origin of rice and species inter-relationship, genetics of disease and insect resistance (in collaboration with Pathology and Entomology Divisions) and development of hybrid lines and utilization of hybrid vigour, studies of tetraploid, haploid, hybrid lines, chromosome mapping.

(ii) *Agronomy*—Rice farming system, fertilizer use and methods of increasing their efficiency, improvement of cultural practices of rice, weed control, water management for rice, cropping patterns and multiple cropping.

(iii) *Soil-Science, Soil Microbiology, N fixation, Blue Green Algae*—Soil Science-Chemistry of submerged rice soils, fertilizer-soil-water inter-relationship on the yield and nutrition of rice, low productive and problem soils and their amelioration of optimising rice yields, mineral nutrition and metabolism, management of upland soils for growing rice, soil physics studies in relation to rice growing and ecological factors and nutrient uptake by rice. Soil micro-biological-studies with special reference to isolation, culture and nitrogen fixation of blue green algae in various environmental conditions, mutational studies for isolation of high nitrogen fixers, studies on various pathogens of blue green algae, factors of algal crust on the transformation of native Fe and Mn, and their uptake by rice crop and multiplication and utilisation of Azolla; isolation characterization and studies on nitrogen fixing ability of heterotrophic nitrogen fixing organisms in rice soils; biodegradation of pesticides in flooded and upland rice soils; degradation of pesticides, chemicals or biological, in problem rice soils and micro-biology of problem soils.

(iv) *Physiology*—Physiology of drought resistance and salt tolerance in rice, seed dormancy, nutro-physiological studies with special reference to dry matter production, carbon assimilation and fertilizer utilization.

(v) *Bio-Chemistry and rice technology*—Bio-chemical basis for drought and diseases resistance, mechanism of bio-synthesis of protein, evaluation of nutritional quality in relation to agro-practices and storage and nutritional studies on released and prereleased high yielding varieties. Practical aspects connected with rice milling industry such as moisture loss in grain and the corresponding weight loss, optimum moisture for milling, harvesting and drying procedures for maximum rice recovery and studies on hulling, milling and cooking quality of various rice varieties.

(vi) *Engineering*—Designing of implements for use in rice cultivation, testing of existing machinery and implements and determining their suitability for local condition, irrigation and drainage requirement of rice crop and post-harvest technology.

(vii) *Pathology*—Screening of varieties for resistance to the major diseases like blast, brown spot, stem rot, bacterial blight and rice tungro virus, studies on associated meteorological factors with a view to forecast disease outbreak, and their control through direct application of fungicides, testing of promising fungicides against rice pathogens, possibilities of minimising disease incidence through agronomic practices and nature of disease resistance.

(viii) *Entomology*—Identification of pest resistance donors and evoluation of varieties with multiple resistance to major rice pests and diseases (in collaboration with Pathology Division).; factors favouring incidence of pests and measures for their forecasting and control; nutrition and bionomics of insect pests, biological control of insect pests and plant parasitic nematodes of rice and rice soils.

The Institute has facilities for post graduate studies and also offers advanced *ad hoc* training in different disciplines. The Institute is recognised as a centre of advance training by several Universities in Iidia for award of Doctoral Degree by research. The Institute has well equipped laboratories and field and library facilities to cater to the needs of the members of the research staff, scholars and research workers from other Institutions and Universities who are deputed to work at the Institute. The National Training Course for 10 months is held for the benefit of rice breeders and technicians. Besides, short term training course for extension workers are also held.

During the year 1974 an Operational Research Project has been lunched on "rice production and integrated control of rice pests" in Orissa, Andhra Pradesh, West Bengal, Kerala, Madhya Pradesh, in collaboration with the State Department of Agriculture and Universities with the object of testing and demonstrating the use of new agricultural technology in increasing rice production and to understand the bottlenecks, if any which stand in the way of adoption of advanced technology of rice production in the villages.

To co-ordinate adaptive research programmes in collaboration with the various rice growing States in the country the All-India Co-ordinated Rice Improvement Project was started in 1963 with the headquarters at Hyderabad.

Head of the Department of Pathology,
Central Rice Research Institute, Cuttack

EXPORT OF FERROCHROME FROM ORISSA

The ferrochrome plant of the State owned Industrial Development Corporation at Jajpur Road exported ferrochrome worth Rs. 12 lakhs to Philippines for the first time during last month. In July and October last this unit exported ferrochrome worth about Rs. 92 lakhs to Romania and Rs. 13 lakhs to Netherland. Another consignment worth about Rs. 60 lakhs will be exported to North Korea shortly.

This plant at Jajpur Road started its production during 1969 and since then ferrochrome worth Rs. 4·60 crore has been exported.

It is felt that to be really politically independent, we should attain among other things self-reliance in respect of defence equipment.

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FISHERY DEVELOPMENT IN ORISSA

Dr. P. K. Misra

Nature has given immense scope for development of all kinds of fisheries in Orissa. The State has perennial rivers like Mahanadi, Brahmani, Subarnrekha, numorous reservoirs, large number of tanks, several estuaries and brackish water lagoons. The Bay of Bengal stretches about 480 Kms. along Orissa coast. The continental shelf wider in the North part of the coast is about 19,200 Sq. Kms. in area and quite rich in marine fisheries.

Fisheries development in the State are divided into two broad divisions, namely—marine and inland. Inland Fishery comprises of culture fisheries and capture fisheries.

Marine fisheries activities are confined to inshore and offshore fishing at present.

Besides, the estuarine areas near the river mouths and the lake Chilika come under estuarine fisheries which are purely capture fishery.

Mechanised boats

The departmental scheme "Expansion of mechanised wooden boats" has created great impetus among the unemployed youths of the State. Under the scheme feasibility reports have been given in favour of different entrepreneurs for 585 nos. of mechanised boats at Paradeep, Dhamara, Chandipur and Astaranga. Out of which the State Financial Corporation have already sanctioned loan of Rs. 1,78,67,420 in favour of 65 parties for 106 mechanised wooden boats.

Boat Building yard

Since there is great increase of the mechanised wooden boats in the State, boat building yards are also needed in private sector. Feasibility have already been given in favour of two private parties, M/S Nan Yard and M/S Agean Boat Builders in order to establish boat building yards at Paradeep.

Processing and storage facilities

In order to provide processing and storage facilities, the department has given feasibility for establishment of two freezing plants of 3·75 tonnes capacity with 50 tonnes of frozen fish storage capacity at Paradeep to be undertaken by private sector for establishment of an ice plant at Paradeep also under private sector, the department has given feasility for erection of 4 ice plants alongwith fresh fish storage capacity of 46 tonnes. The Orissa State Financial Corporation have in the meantime sanctioned 3 Nos. of ice plant of 36 tonnes capacity. Similarly, for Dhamara feasibility have been given for one ton freezing plant and also ice plant with storage capacity of 34 tonnes.

Marine fish catch

Durig 1975-76, the department caught 242 tonnes of marine fish by the gill netters fetching a receipt of Rs. 9·86 lakhs and by trawling 1431 M. T. of fish were caught fetching a receipt of Rs. 16·25 lakhs. The annual landings of marine fish of the State show an increasing trend from year to year.

Export of prawn

The export of marine products such as prawn in the State has shown considerable progress and tremendously captured the foreign markets. The export of prawn from the State during 1974-75 was to the value of Rs. 2·41 crores whereas the export during the year 1975-76 was valued at Rs. 4·50 crores. With the introduction of more mechanised boats, it is expected that the export of marine products in the State will considerably increase in the current year as welll as in the following years during the plan period.

Assistance to traditional marine fishermen

with a view to assist the traditional marine fishermen who are unable to improve their basic trades a sum of Rs. 3,700 is being given as loan to each fishermen for one country boat and net subsidy to the extent of Rs. 925 or 1/4 of the loan availed is being given by Government. During 1975-76. seventy-eight traditional marine fishermen have availed loan of Rs. 2,39,800 and a susidy of Rs. 43,000 has been granted by Government through the Bank advancing loan.

Production of fish seeds

Inland fisheries development includes improvement of culture and capture fisheries in fresh water environment. Supply of pure fish seed to Gram Panchayat and private pisciculturists of the State is the primary responsibility of the State Fisheries Department. During 1976-77, 311 million spawn were produced and department alone collected 144·11 million of spawn from the rivers and produced 67 million of spawn by induced breeding. In the private sector, 100 million of spawn were collected.

The fish production both in marine and inland side has been increased during 1975-76. 25,000 tonnes of marine fish and 21,000 tonnes fresh water fish were caught and marketed. This year it is expected that the target will be achieved.

Assistance to inland fishermen

In order to uplift the socio-economic condition of the traditional inland fishermen Rs. 3,700 is being given to each fishermen through nationalised banks for one country boat and net 25 per cent subsidy is also admissible through the Bank advancing loan. 29 beneficiaries have been granted a sum of Rs. 77,050 and a sum of Rs. 27,000 has been given as subsidy.

In order to encourage the pisiculturists for remodelling their tanks and reclaiming their derilict water areas a sum of

Rs. 4,000 is being given through the banks. Subsidy to the extent of Rs. 1,000 or 1/4 of the loan availed is being given by Government through Bank. So far Rs. 55,430 have been given on loan to 30 beneficiaries and Rs. 28,320 have been given as subsidy by Government through the bank.

Kirtania & Rajalaxmi A. R. C. Projects

Two fisheries co-operative schemes, namely, Kirtania Fishermen Co-operative Society and Rajalaxmi Fishermen Co-operative Society financed by the A. R. D. C. is under operation. Each co-operative society will operate 50 mechanised boats phased over a period of 3 years during the plan period.

Brackish water fish farming

Under I. C. A. R. a research programme on All-India Co-ordinated Research Project on brackish water fish farming has been established at Keshpur. Four stocking tanks with water spread area of 0·4 hectares each have been taken up at Keshpur Brackish Water Fish Farm for polyculture experiment. Under the project 520 Nos. of chanos fry and 32,000 Nos. p. indicus fry have been stocked in the tank. Besides, length frequency, measurement of stocked materials, soil samples, water samples, plankton samples, crab samples of four stocking tanks have been taken up. It is observed that the growth of shrimp and fish in the stocking tanks is satisfactory and the maximum size of the prawn caught in the sampling is 155 M. M. with corresponding weight of 225 gms.

Composite culture of Indian and exotic fishes and fish production

In order to culture riverine fish seed production and collection techniques I. C. A. R. have establishtd one All India Research Project at Jeypore in the district of Koraput during the year 1976. The centre under the project is being implemented under the supervision and guidance of the Project Co-ordinator, C. I. F. R. I. The centre under the project has started functioning from 21-4-1976 after joining of the Junior Fishery Scientist and 12·60 lakhs of Indian major carp spawn have been produced under the scheme.

Utilisation of trash fish & transportation

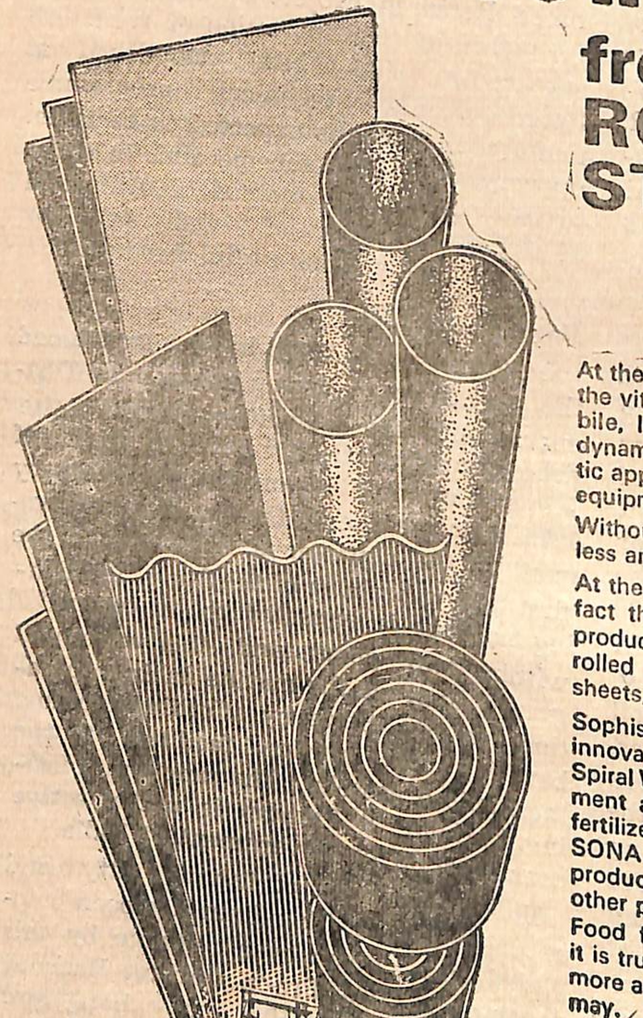
Under the I. C. A. R. All-India Co-ordinated Research Project on utilisation of trash fish and transportation of fresh fish one centre has been established at Paradeep. The technical programme under the scheme is expected to be taken up very soon. The scheme aims in order to find out efficient method of utilisation of different varieties of trash fish for production of various useful products.

Harbour & Jetty

Government of India have sanctioned the project for fishing harbour at Dhamara and the foundation stone for the fishing harbour was laid down by the Chief Minister of the State on the 2nd February 1976 which is one of the greatest achievement of the department since this is the first fishing harbour of the State. The fishing harbour is expected to be completed within two years and this work will greatly improve the marine fishing operation in the State by affording landing, berthing and service facilities to the mechanised vessels. The sanction of fishing harbour at Paradip is under active consideration of Government of India.

The construction of fishing jetty and approach road at Chandipur has been completed and taken over charge by this department. The Pre-Investment Harbour Survey of Fishing Harbours, Bangalore have surveyed the Astaranga area for a fishing harbour in Puri district. With the development of fishing harbours and fishery jetties and the introduction of large number of mechanised boats the fish production of the State will increase substantially.

Director of Fisheries, Orissa, Cuttack.



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RSP/PAJ-5/75-A

THE CULTURAL PROFILE OF PARAJA'S

Shri Rama Chandra Ulaka
Minister, Food and Civil Supplies

The Paraja are one of the main tribes of Orissa. Compared with other tribal communities they show some difference in their settlement pattern, manners and customs, and cultural configuration. The dress and adornment of the Paraja and the ornaments used by their women are of special type. They like to remain aloof from people of other communities and feel shy before them. Free mixing and free talking with outsiders are out of their habit.

The Paraja houses are of one type for all irrespective of economic or social differences among them. The houses of different families are built separated from one another and there is only one entrance to each domecile. No exit is provided at the back of the house. Thus the front door of the house serves both entrance and exit. The hearth, granary, shrine and place for sleeping are all inside the house. All members in a family irrespective of age sleep on floor inside the house. For want of space the use of cot is rare. Depending upon the economic condition the Paraja are divided into two sections: Bada Paraja and Sana Paraja, the former being economically more progressive than the latter. In spite of lack of education and being steeped in superstition the Paraja are simple, hard working, tolerant and hospitable.

There are mainly two important places in each Paraja village. One is known as 'Berana Munda' and the other 'Nisani Munda'. A constellation of some circular stone slabs lying in the centre of the village is called 'Berana Munda'. The Paraja denote this place as 'Mandu Dand' which lies in front of the house of village head man. The people of the village gather at 'Berana Munda' or village assembly and discuss matters relating to village and festivals observed in the village. The village shrine in which the deity called Hundidebata is installed is called Nisani Munda. It is made of stone slabs and encircled by menhirs which are fixed erect on the ground round the shrine. Hundidevata consists of an earthen pot and a chopper made of iron and an iron pole which is fixed into the ground ever since the village was established. The iron pole is kept fixed in its original pattern undisturbed. But the earthen pot and the iron chopper are replaced with new ones thrice in a year, once in the month of Srabana (Bandapana masala), one either during any new-eating ceremony or just before Chaita Parba and finally at the end of the year in accompaniment of proper rituals and ceremonies. The main element of the ritual complex consists of offering to the deity, of animals such as fowl, goat and pig which are sacrificed with the help of the new iron chopper.

In each Paraja village there is a bachelors dormitory (Dhangada Basaghar) and spinsters dormitory (Dhangadi Basaghar). The boys and girls spend the night in their respective dormitories and dance together at the village assembly (Berana Munda). They meet freely at Berana Munda and almost every evening keep themselves busy there in singing songs of question-anower type (Laga Gita) in a competition with one another. This is the best occasion for them to communicate and exchange their ideas and feelings with one another through the media of love songs. The music and dance which accompany the song-competition make the whole situation most attractive and culminate in match making leading eventually to marriage between lovers. When the boys and girls feel tired by continuous dancing and singing they retire to their respective dormitories for rest.

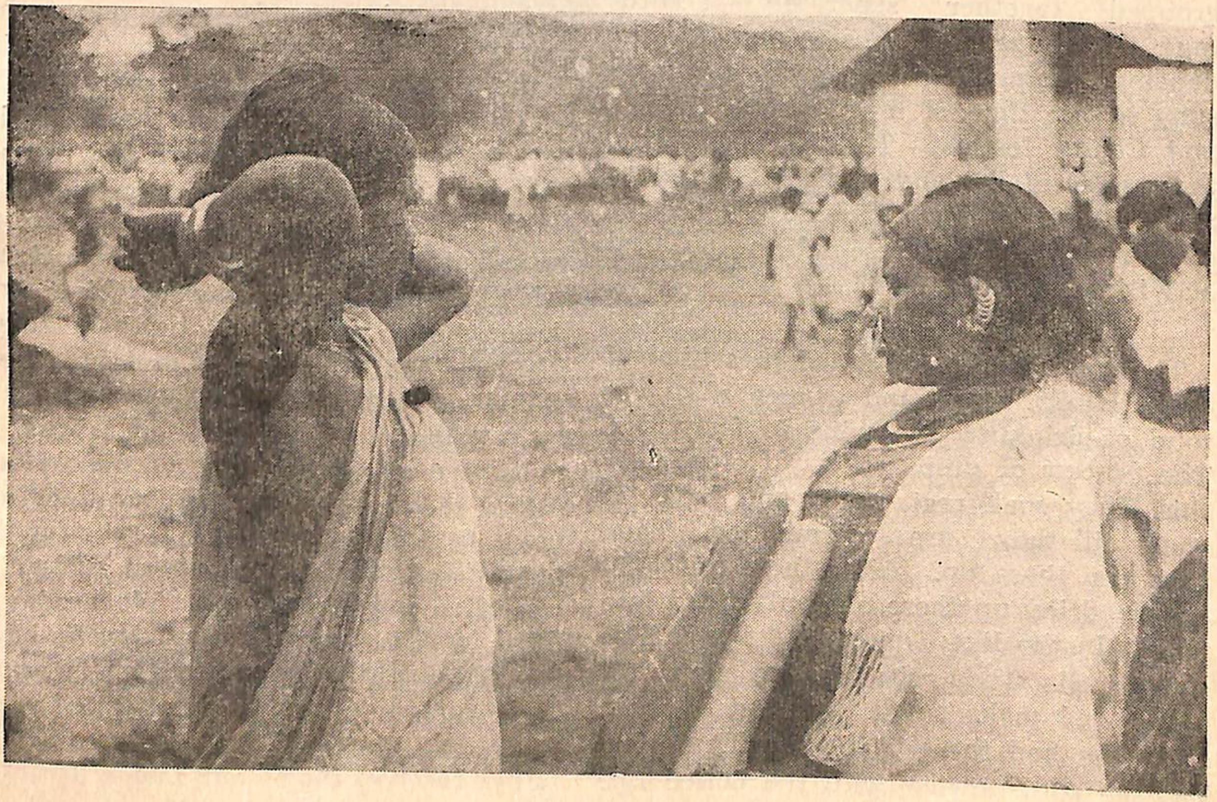
The office bearers of the administrative structure of the Paraja village are Jani, Muduli, Chalan, Disari, Gunia, Guru Main and Bhatanayak. Jani is the village headman-cum-priest and costodian of religious articles. Muduli is another chief of the village and is in charge of all affairs concerning the village. The posts of these two headman are hereditary. Chalan is responsible for informing the decisions of Jani and Muduli to the people and coercing and persuading them to follow these decisions. Determining auspicious moments for observing rituals and giving name to new born babies are work of Disari. He is more or less an astrologer in Paraja village. Gunia is a sorcerer-*cum*-medicine man. He tries to cure illness of people by uttering incantations and applying herbal medicines. Guru Main is the priest whose duty is to worship the village goddess on ritual occasions and in festivities. The act of his benevolence includes offering of prayers to village goddess at the time of illness of some person of her village for recovery. Generally a Paraja woman works as Guru Main. Bhatanayak is an important person in Paraja village. He has to purify those who are outcasted for having committed certain socially disapproved acts or having suffered from ritually polluted conditions. Some of the ritually defiling acts and conditions are cow-slaughter, injury or wound caused by the attack of a tiger, formation of maggots in the wounded part of the body and illness and suffering caused by any contagious disease. The concerned person who is a victim to these suffering is out-casted and unless he is made free from ritual pollution by undergoing purificatory rites which are prescribed by the village Bhatanayak, he is not readmitted into the tribe. In addition to the purificatory rituals the out-caste provides a pig, a goat, three fowls and some money and rice to the village feast which is arranged by all people of the village on this occasion.

The processes of ritual purification include the following steps. The village

Bhatanayak takes the out-caste to the confluence of the rivers or hill streams and shaves his head clean. Thereafter he sprinkles cowdung water over him and bathed him in the river. After he is bathed he touches his tongue with a hot gold ring. These actions are believed to make the concerned person ritually clean and also help him in getting himself admitted into his society. Bhatanayak receives a piece of new cloth, rupees five half kilogram of rice and half kilogram of ragi from the concerned person for his ritual services. The last role which Bhatanayak has to play on this occasion is to eat first the rice cooked in the feast. At this time a five-rupee currency note is kept by the concerned person underneath the leaf-plate from which Bhatanayak eats his food in payment of additional gift to him for the ritual services. After Bhatanayak has eaten others present at the spot make full justice to the ritual feast.

The manner in which Paraja women wear their clothes and ornaments is unique. They wear ten to twelve brass rings in each ear. They also wear similar rings on nose. The ear and nose rings are similar . If any Paraja woman does not wear such rings she is subjected to serious criticism by the society and severe humiliation at her mother's-in-law place. Therefore, every Paraja woman whether rich and poor is very much particular about wearing the ear and nose rings. A Paraja woman exhibit a great skill in getting herself dressed and adorned. She arranges her head hair into a flat bun and uses a number of hair-pins on either side of the bun in order to keep it in position and add beauty to the hair style. Besides, she uses silver rings one in each finger of her hands. The old one-rupee or half-a-rupee silver coin is studded on each ring and all these rings when worn in the fingers make her look more handsome. She also likes to wear two or three rounds of necklace made of coloured beads. She puts on plastic bangles of various colours in her wrist.

The Paraja woman has a speciality in the manner of wearing cloth. She uses three-fourth of her cloth to cover the



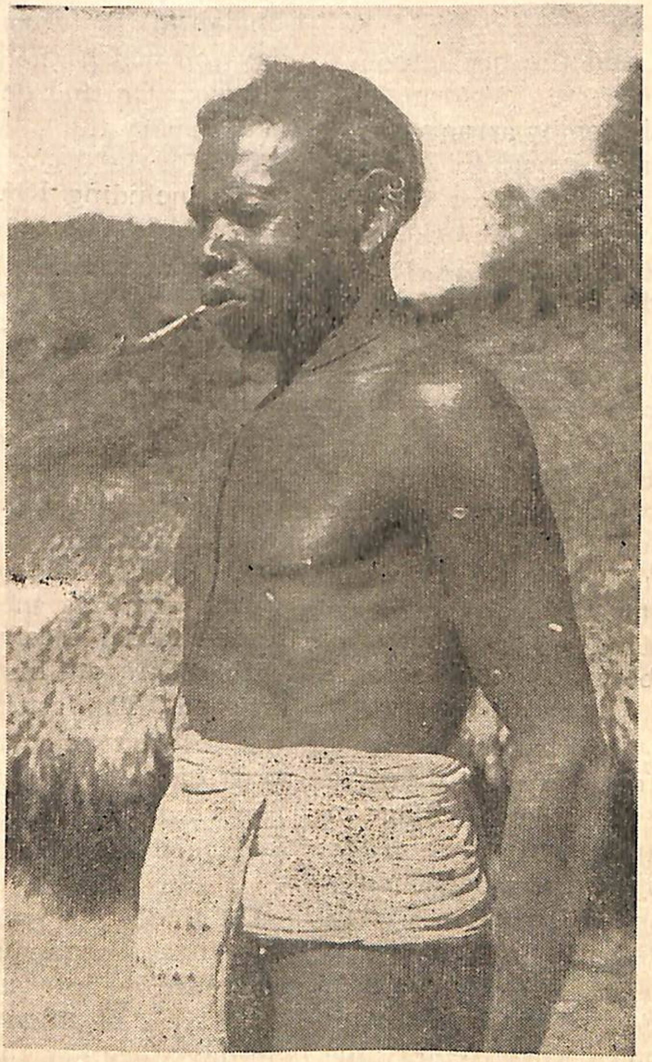
portion from waist to knee and roles the remaining one-fourth of the cloth round her breast and back and ties the end of the cloth by means of a knot which rests on the upper side of her left shoulder. The Paraja women are very fond of dancing and the manner in which they wear their cloth is very much befitting to it. It is their opinion that any alteration in their usual manner of wearing cloth creates obstacles in dancing. The traditional way of wearing cloth is also most suitable for field work.

Though the Paraja are lagging far behind in the sphere of education they are far advanced in respect of dance and music. The inborn histrionic talent which they are endowed with finds expression in dances and songs like *Dhenmsa dance, Dundunga dance and Laga songs* (competitive songs). As soon as the Paraja boys play their string musical instruments in accompaniment of self-composed songs all others, young and old assemble together and get ready to dance. As a matter of their acquired character the young girls, adult and old women are grouped together separately according to age groups and start dancing. Competitive songs are generally sung at the time of marriage ceremonies and Chaita festival. The Paraja forget their woes of life and get themselves relaxed after hard work by devoting every evening to these recreational and cultural activities.

The Paraja are habituated to a kind of drink Landa. Men and women alike are fond of drinking this wine in festivities. The process of preparation of landa is this. They soak ragi, suan and jana in water till they are germinated. Then they dry these up. After these are sufficiently dried up these are pulverized into flour. In the like manner rice is also pulverized. They mix the rice flour in water and make small balls out of these and then boil these in steam. Then they put the corn powder with the boiled rice balls in an old earthern jar and pour water into it, and keep it undisturbed. In three or four days the contents get fermented and becomes intoxicated landa which is a great favourite of the Paraja.

There are three types of marrige noticed among the Paraja. They are called Maga marriage, Jhinka marriage and Pasnamundi marriage. Maga type corresponds to marriage by arrangement in which the marriage is settled by negotiation. Generally the arranged marriages are held in the month of Magha because all crops are harvested by this time and food is available at home in plenty. In this case two or three persons on behalf of the bridegroom visit the house of bride's father. They carry a bamboo pole and some wine with them to the bride's village. Generally such visits take place in the month of Kartik. On reaching the bride's house the bridegroom's team keep the bamboo pole inclined to the middle wall of the bride's house, and keep hanging from it all the wine bottles which they carried with them. The bride's father makes enquiry as to the purpose of their coming. In reply the bridegroom's party report that they came on 'Malabaria' or 'Raibaria'. If the bride's father does not want to give his daughter in marriage to the particular boy he asks them to remove the bamboo pole from his house and indicates to the Raibaria or Malabaria to take away the wine bottles. On the other hand if the bride's father is in favour of this negeotiation he or the bride's brothers accept the wine bottles and all present there including Raibaria drink the wine, and ask Raibaria to come again. This is indicative of the consent of the bride's father to the proposal. Preparations are made by the bridegroom's party for the next visit to the bride's house. Disari is consulted and an auspicious Wednesday is fixed for the visit. On that day Raibaria and Malabaria proceed to bride's house. They carry with them a bottle of wine, some rice, ragi and money. The bride's father receives them and makes arrangements to entertain them and his village headman with wine. He mixes some wine with the wine brought by Raibaria and Malabaria and invites the village headman to grace the occasion by his presence. He offers wine to the Raibaria and Malabaria and village headman and discusses the negotiation with them and finally settles the matter.

An auspicious day is fixed for the next visit to the bride's house. This time the bridegroom himself goes to the bride's house accompanied by his relatives. According to the tradition the bridegroom's father pays some bride-price (Jalla) to the bride's father. While returning with the bride and before crossing the boundary of the bride's village the mother's brother of the bride is given a pig and some wine in token of gratitude shown to him. The bride's brother is also paid some thing which is known as Sala Khedia. On reaching the groom's village the marriage is celebrated in great pomp. A curious type of gymnastic performance known as 'Kumudamara' is arranged at the time of marriage in the Paraja society and it is performed by those who can afford it. In this case two long bamboo poles are set apart are fixed upright with the ground and another pole is tied to them horizontally at a height beyond reach and a water melon is suspended from it. The upright bamboo poles are anointed with castor oil and made slippery. The bride's party is given chance first to climb up and cut the melon with one stroke. If the bride's people come out successful in doing so they are given a potful of wine (Landa) with some



meat in recognition of their success in the feat. If the bride's party fails in doing so the groom's party comes next to make an attempt at it. Success on their part means a reward of a potful of wine and some meat from the bride's party. In this exercise the defeated party gives a reward of fixed amout of wine and meat to the winning party in recognition of its skill of performing the feats of valour.

Where the bride's and the bridegroom's parents cannot afford to perform the marriage of their children by arrangement, in such cases marriage is held by capture (Jhinka marriage). A mediator (Sutrakari) acts as liaison between the bride and the groom. At the appointed place and time the friends of the bridegroom capture the bride and bring her to the groom's house by force. Generally the incident of bride capture takes place at the weekly market or at the time of some festivals. In this case the groom, makes a beginning by gently holding the hand of the bride and pulling her to his side. Thereafter his friends join and carry her to the groom's village. The curious element to be noted in this process of capture is that if the bride gives blows to the groom's friends it is indicative of her consent to the marital union with the particular groom. After a few days some people from the bride's village visit the groom's village in search of the kidnapped girl. One of the search party acts as the leader of the party (Khojbana) and others of the team accompany him as Raibaria. Khojbana is distinguished from Raibarias by his iron plated bamboo pole which he carries with him on this occasion. They enter the groom's village on th plea of searching for their 'lost cow'. It is needless to say which village is involved in this capture is known much before the visit of the bride's people to this village. On reaching the village the party walks straight to the headmen and asks the chief of the groom's party in whose cowshed their 'cow' is tied. In reply the village Muduli informs that their 'cow' has been tied in some cowshed and is given gruel and water properly and there is no question now of returning it to the owner. The concerned person adds by saying that the price of the cow will be paid duly. On behalf of the groom the village Muduli assures the Khojbana of the payment of bride-price and asks him to come again some day to get it.

After a few days the bride's father sends intimation through the village Chalan to the groom's father about the day on which he proposes to visit his village. On that day the groom's father keeps every thing such as rice and wine ready for the feast. As soon as the bride's party including Khojbana arrives at the groom's village they are respectfully greeted and led in to the groom's house. The married women of the groom's house come forward and in great submissiveness anoint the feet, knee, shoulder and forehead of the Khojbana with turmeric paste mixed with water and then greet them in folded hands. After they are led to some one's cowshed where they all sit and start talking to each other, both the parties carry on arguments and exchange words with one another. At the end the bride's father receives the bride-price and with others of his team returns home satisfied. The last ritual to be observed in this case is to anoint turmeric paste on the body of the bride and groom on an auspicious day fixed by the village Disari and solemnize the union.

The third type of marriage which is known as Pasnamundi is equivalent to marriage by intrusion. As a prelude to such types of union song competition goes on days together among the boys and girls, and though the medium of competition feeling of love and affection are exchanged between different pairs of boys and girls. When the emotion of mutual attraction reaches its culmination the girl takes initiative in this matter and proceed to the house of the boy whom she loves most. On reaching his house she asks mother for some rice or ragi gruel. The groom's mother knows already the implications of her request and therefore welcomes her and serves the gruel in a leaf-cup. After eating if the girl puts the leaf-cup underneath the water pot, the boy's mother understand from this that the girl wants to become her daughter-in-law. She then confirms it by asking the girl to fetch water in the jar given to her. The girl goes to the nearby hill stream or any other source of water and heat it. As soon as her prospective bridegroom arrives at home she anoints turmeric paste on his body and bathes him in the hot water. Some times later the groom's father informs the bride's father about it. The bride's father gets annoyed at the self indulgence of his daughter in match-making and sends some of his relatives to the groom's house to get the bride-price instead of going himself for this purpose. On the day of payment of the bride-price the groom's father arranges a feast to entertain the bride's party and as advised by the village Disari the marriage is solemnized and consummated. The other terms used for such type of marriage are Udulia and Paisamundi marriage.

The Paraja takes the help of an elderly woman at the time of child birth. Guru Main of the village is also asked to remain present at the time of delivery. The works of Gurumain are to light the lamp and burn insense and utter incantations. Inspite of these measures if the delivery becomes painful and if any complications arise, then the sorcerer is sought for and the necessary herbal medicines prescribed by him are administered. After the child is born the umbellical cord is cut and the child is given a bath near the pit dug in the courtyard of the house for this purpose. The mother and child remain polluted until the navicle dries up and falls off. The midwife who helped at the time of delivery is called home on the day on which the navicle falls off and in her presence the dried navicle is thrown in to the pit and insense is burnt and lamp is lighted near the pit which is then filled in with earth. The midwife gets from the family some rice, ragi, turmeric and oil on this occasion and thereafter the family undergoes purification of birth pollution.

When death occurs in a family two people carry dead body to the cremation ground. These two people are called Madadharia. A pot full of gruel is also taken along with the dead body. This gruel is known as *Pendchopa.* After the dead body is cremated the pot containing the gruel is pressed under a piece of stone in order to break it. All the thing used by the deceased are thrown in the cremation ground. The relatives of the deceased family contribute one rupee each and with this buy some wine which they drink together after taking bath. To express mutual sorrow the people get their gruel from their respective families and dine together for one and half days in the family of the deceased. On the second day they get the house of the deceased cleansed and the clothes of the members of the deceased family washed. The pall bearers go to the cremation ground and collect the ashes into a heap and place three pieces of stone in a triangle on the ashes and lay a large piece of stone over them to keep the ashes covered. Then they go to the nearby river or hill stream and catch some fish and reach the place where the clothes of the deceased family are washed. They take out their own cloths and wear some leaves from a tree called Kan Kada Ptaar and give their cloths for washing. After the cloths are washed they throw away the leaf dress and wear the wet cloths and proceed to the house of the deceased with the fish they caught from the river or the stream. On reaching the house they start cooking seven fistful of rice and fish and divide the cooked food into seven shares and make seven food packets with the help of sal leaves, and give these to the members of the family to eat. This food is known as Pitakhia or Pitachhua. Thereafter they collect all the cooking vessels, laddle, strainer wood and ashes from woven and throw them near the cremation ground. In the evening a fowl is sacrificed at the place where the person died and some rice, ragi, money, oil and turmeric are given to the pall bearers who in their turn anoint the oil and turmeric over their body and get themselves purified.

At night two people go to the cremation ground with a packet of cooked rice held suspended from a carrying pole and call aloud the deceased person by shouting his or her name and ask him/her to eat the cooked rice which represents pitabhat. In the meantime some ragi flour is spread over a leaf-plate at the house of the deceased family and kept covered under a basket. No body is allowed to remain present at that place. The members of the deceased family come out and stand outside their house. The pall bearers soon return home and on their way back keep uttering loudly the name of the Bhagabat. They also stand in front of the house of the deceased family. Some one from inside the house asks the reason of their coming. At this the pall bearers reply "We have brought happiness in place of sorrow." Thereafter the pall bearers get into the house and scrutinize the ragi-flour which was kept covered. If any foot print of a person is marked on the flour it is suspected that some sorcers has eaten up the deceased person. If foot prints of any animal or bird are noticed then it is believed that some deity has eaten up the deceased person. If no foot print is seen on the flour then it is believed that the Yama has taken away his life. On the third day the deceased family arranges a feast and invites all people of the village to partake it. It is the tradition of the Paraja culture that every one in the village should take part in the feast. A family of moderate means arranges a modest feast on the third day as the last ritual of the death rites where as a family of sufficient means arranges a sumptuous feast in the month of Pausa or Magha on this occasion.

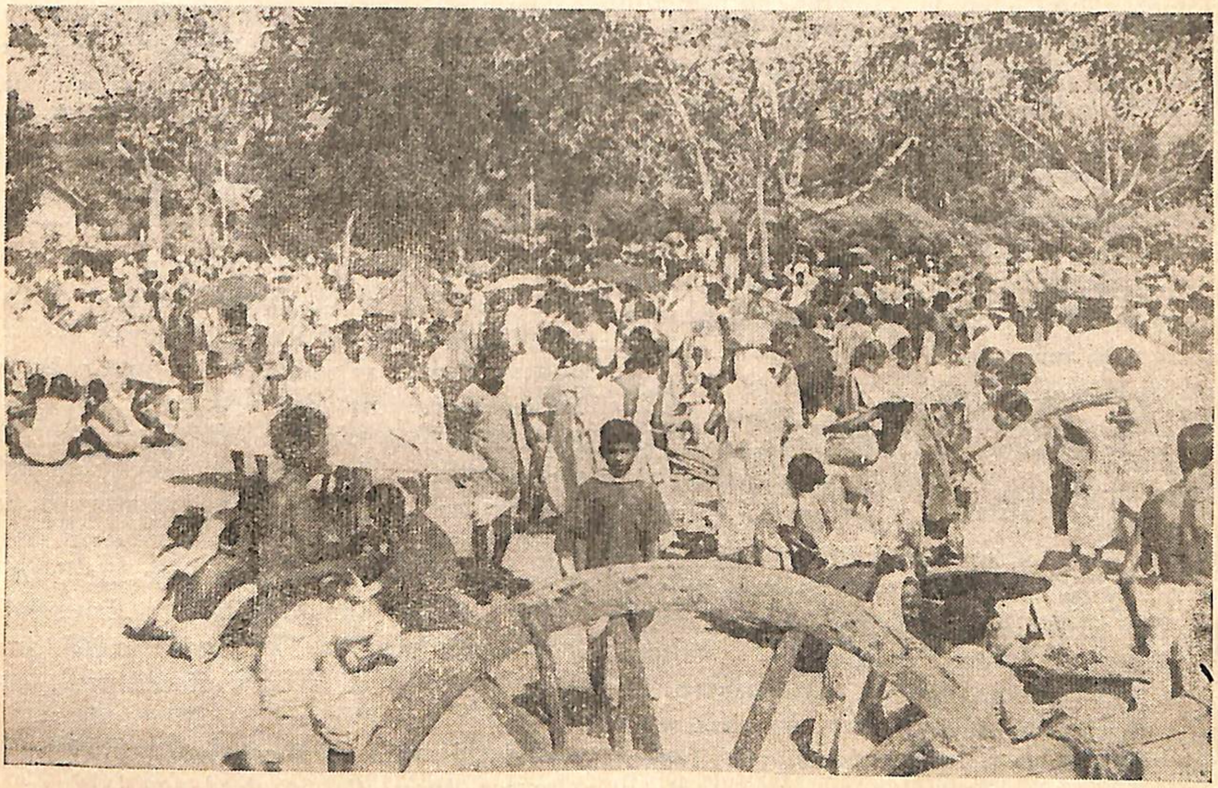
The term used by the Paraja for the soul is Duma. The soul of the person who was killed by a tiger is called Bagha **duma.** The places of residence of Dumas are those where death occurred as a result of falling from tree, drowning in water, falling down from hill or in cave and being attacked and killed by any wild animal. No one dares to visit such place lonely. If some one is attacked any time by Duma he or she takes the help of sorcerer or Gurumain to be free from its evil influences. It is the tradition that each paraja family solemnly calls the Dumas of the deceased members at the time of feasts and festivals and worships them first and then perform necessary rituals concerning the occasion.

The Paraja observe different festivals in different months. In addition they observe a festival called Raji Sustha Puja which is connected with heavenly bodies. If langia stars, Dhum ketu or Ulka appear in the sky the Paraja apprehend that the country will be seized with calamities and beset with famine and want. Accompanied by the village Gurumain the people in different groups visit village to village and collect alms from different families. When these stars disappear they consult the village Disari who finds out an auspicious day in which the collected rice is cooked and eaten by all people concerned. They also perform Puja for the Rain God invoking the Indra to give rain and protect the crops from the attack of beasts. During Solar and Lunar eclipse they offer prayers with the help of Gurumain and sorcerers to the planets to rid them of their evil effects. The rites observed on this occasion are called Rahu and Ketu puja and the animals which are sacrificed to appease the planetory bodies are pigs, goats and fowl. At the time of eclipse herbal medicines are also collected.

The Paraja observe Jhankar puja or Annaka puja or Dahani puja in the month of Margasira as the Kandha Tribes do. On this occassion they use new laddles made of goard in place of old ones which they dispose of as a part of the festival.

They observe Laxmi Puja or Taku parba in the month of Ashara. On the day which precedes Srigundicha the village Jani offers lamp and insense at Nisani Munda and sacrifices a fowl. The village Chalan keeps the people of the village informed on the previous day about this festival. Each household keeps its house and cloths clean, and performs the Laxmi puja. The village Jani brings a ragi plant from his own field after performing necessary rituals and offering lamp and insense to the plant and sets it straight at Nisani Munda. After performing necessary rituals there the village Jani puts the plant in a basket and brings it to his house. During the transit of the plant from the Nisani Munda to the Jani's house the people of the village resound the village with their music and dance. The ragi plant represents the goddess Laxmi and the village Jani worships her by offering lamp and insense and vermilion. While the puja goes on Jani's wife takes some turmeric powder and rice and marks these on the forehead of the persons who constituted the procession of shifting the ragi plant from the Nisani Munda to her house. The same process is repeated in each and every Paraja family which brings a ragi plant from its own field straight to its house where it is worshipped. The wife or daughter-in-law of the man who brought the plant marks turmeric and rice on his forehead.

As the last part of the Laxmi Puja the Paraja perform Taku Parba. The village Jani prepares a cake by roasting mango kernel mixed with mollases and offers it to Jhankar goddess. Non-vegitarian food and wine is forbidden on this occasion. But cakes etc. are prepared on this day and offered to the Jhankari deity and eaten sumptuously. The Taku Parba is very expensive for about ten or eleven days. Since the Taku Parba is observed, the people spend their time in feasting and drinking, dancing and singing. After Bahuda Gundicha the Paraja offer again insense and lamp to the ragi plants which they brought home previously and keep them at the place where seeds of crops



are stored. With this Laxmi worship as observed among the Paraja comes to an end.

The Paraja observe Langaladhua Punei or Bandapana Parba in the month of Srabana. Those who have plough observe this festival and others who do not have plough observe it by only preparing cakes and eating them. On this day they clean their houses and stop all works relating to cultivation. They wash the ploughs, yokes and other agricultural implements in the nearby river and keep them clean at home. They also wash the equipment called Badam which is used at the time of sowing seeds and keep inside it a crab Thereafter they proceed to the forest and collect some flowers called Baghanakhi. They also bring from the forest a kind of tuberous plant called Tainladandi with its leaves and roots in tact and some branches of Bela and Anla and keep all of these on the plough and yokes which are decorated with a kind of red earth called gerumati. They also cover the plough with a new piece of cloth. Thus they prepare several sweets dishes and offer them to plough, yoke and Badam. At sunset when the cattle return home the headman of each family covers his body with the new cloth which was kept on the plough and moves gently the flowers of Baghanakhi on the cattle, and beats them with Tainladandi. The significance of this ritual operation is that the cattle will not be attacked by tiger.

The next items of ritual concerning this festival are that the head of the household keeps their handful of cooked rice in the Badam in which the crab was kept and worship if by offering insense and lamp. Next day the crab is released in the field and the cooked rice is sprinkled over the **field**. After this the people are engaged in eating and drinking and dancing and singing. Next day the festival is brought to a close by soaking the tuft of grass in turmeric water and sprinkling it over the place.

Nachuni Parba or Bhada Parba is observed at the time of Dashara in the month of Bhadraba. The people clean their respective houses and strat the ritual by cooking new paddy leaves for want of paddy, tamarind, a kind of tuber called taraga in their respective houses. The villagers according to their means collect the ritual articles and sacrificial animals such as goat and fowl go out of the village make a small shed thatched with the leaves of Jamukoli tree and sacrifice the animals there. Then they come back home and eat the cooked new paddy with meat and wine. This is the end of the Nachuni Parba. The Paraja observe the festival of lights called "Dipabali Parba" either two days earlier or two days later of the day of Deewali. On this occasion, each household cooks a mixture of water-melon, Jhudanga and varieties of green leaves and place some quantity of this cooked vegetables and green leaves on the roof and start worshipping the god of fire. Similarly each family keeps some portion of the cooked vegetables and green leaves in the basket in which crops or seeds are kept and then start worshipping the goddess Laxmi. The other household articles on which these cooked materials are kept are mortar and pestle, grinding stone and woven. It is at this time the family members pray that let all these household belongings remain engaged for all time. The broom stick is also offered with the cooked vegetables so that it keeps the house clean all the time. In the like manner, they offer cooked vegetables and grren leaves to all the agricultural implements and pray that let all the agricultural operations go on smoothly all the time This is the occasion, on which the Dumas of their agnates are remembered and offered food for their kindness of providing them with food and drink. At night each Paraja family kills a fowl and cooks it and eats with wine.

The Pusa Parba comes in the month of Pausa. It is observed on the fullmoon day of this month. The Paraja exhaust in this month all the crops which they harvested in the month of Margasira. Each family disposes of almost all the agricultural produce such as paddy, suan, Kantria, Alasi, Chili, sweet patato, etc., at a cheap rate and with the sale-proceeds buy new cloths for all members of the family. The Paraja are found purchasing winter cloths in this month. It is noticed that the price of their agricultural produce goes down and the price of their daily necessities rises up in this month.

On the day of Pusa Parba each family finishes cleaning the house very early morning and married women get themselves busy in such works as grinding ragi and husking rice. The able bodied adult different groups and proceed to the forest to collect whatever amount of fuel to be needed for the following eight days. In the evening the married women walk to the river with their respective earthen pots and bring water called Duma Pani and instal them at the shrine (Debata Gandi) in their respective houses. At night they remmber the Duma deity by sacrificing a fowl and offering insense and lamp at the shrine.

In the meantime the big logs of wood collected at the village assembly are set on fire. All the people of village gather round the fire. The bachelors strat playing their starting instrument (Dudunga) and spinsters start dancing in groups. After a few hours the bachelors and the spinsters under the leadership of head bachelor (Mula Dhangada) start the work called Pusachora. The work of chief bachelor is to see that discipline is maintained among the bachelors and spinsters and the meaning of Pusachora is that the bachelors and the spinsters get into backyard or garden of any family of the village and steal potato,pumpkin, cabbage, brinjal, etc. unobstructed. Whatever vegetable they get by this method they roast them in the fire at the Berana Munda and eat them with wine in great delight. The fire which is lighted at the Berana Munda is called Mundukod. In the meantime a fowl is sacrificed at the house of the chief bachelor and thereafter the bachelors and spinsters together go on dancing and singing songs (Landigita) and move from ward to ward in the village.

The Landi god is one of the most important deity of the Paraja who appears once yarly to circumambulate the habitate of the tribe. The Landi songs are pregnant with themes of devotion, tolerance, peace and order. All people of the Paraja community participate in the ritual activities concerning the Landi deity. The Paraja women with the village Jani spend the whole night at Berana Munda (Mundukod) on this occasion. On the second day all households of the village make cakes of ragi and alasi, cooks rice and meat and prepares currry and invite each other with remarkable humanity to their respective houses for partaking the food. The spinsters of the village get themselves busy in distributing the food stuff in each other's houses.

On the third day a community feast is arranged and all people of the village contribute rice, dal, vegetables for this feast. After everythinog is cooked the rice is served in two big mats one for the males and the other for the females. All men of the village sit around the mat and eat together. The same thing is followed by the women of the village. Sometimes one feeds the other and if some one refuses to eat and gets away others follow him or her and bring him or her back to the place. The tradition of eating together and the songs concerning the Landi god reinforces fellow feeling and *esprit de core* among themselves. All intrapersonal conflict and tension are forgotten on this occasion and all people get themselves found together in a tie of affection, friendship and mutuality of obligation.

Next day inter-village visting takes place among the relatives and friends. The visitors move from door to door and partake whatever food and drink is served to them. The spinsters collect some money from each other and arrange a feast and invite the bachelors of the village to it. In the same way the bachelors reciprrocate the custom. This kind of reciprocity reverberates also among old men and women.

Feasting, entertaining and inter-village visting continue for four or five days and during this time, the family granary is almost drained out and the people become indebted to the itinerant money-lenders and merchants. On the last but one day which is called Denamapa all the households deposit their respective shares of Landa wine in the courtyard of the village Jani. On this day they abstain themselves from drinking wine.

Three of the bachelors of the village tie long strings to the legs of two fowls. All people irrespective of age and sex assemble at Berana Munda. The village Jani and Muduli are made to sit at Berana Munda and the two fowls are tied to their legs. The sterile couples who have already enjoyed marital life for three or four years are summoned before the village Jani and Muduli and are fined one rupee each. With this amount some tobacoo and bidi are purchased and all people get their respective share of it. The next item of work is to tie the fowl which was tied to the leg of the village Jani to a bamboo pole and its wings are severed. The significance of this action is that the community disallows the unmarried boys and girls to go astray and they take a vow before the elders of the village present at Berana Munda not to commit or indulge themselves in sexual offence. The spinsters get the wingless fowl and the village Jani and Muduli get the other fowl. At the same place the fowls are roasted and all people present there eat the meat with Landa wine. The night is spent in great merriment and thus the festival comes to an end.

Though the month of Chaitra is the first month of the year, it is the month of acute scarcity and it is needless to say that it is the end of all months. Whatever food stuff and financial resources are left after observing different festivals held in previous months are exhausted at the time of Chaitra Parba, and the people become completely empty handed.

The Paraja observe new eating ceremony in respect of mango, mahua, Kandula and many kinds of fruits and roots collected from the forest. They clear up all old debts and get new debts in this month. They are employed as labourers on annual basis from this month. Chaitra Parba is observed in great pomp in this month. This is how the festival is observed.

The day previous to the day of festival is the day of cleaning. Each family cleans its house and levels up the surrounding. In the evening the married women of the village go in a procession to the nearby river to fetch water (Duma Pani) in new earthen vessels. The water which is brought in a lonely time remembtring the Dumas, is called Duma water. They place these vessels in each of their shrines. At night the women cook rice and dal mixed together and offer it to Duma water with respect. All people regardless of economic status wear new cloths on this occasion.

On the second day the women carry on cleaning their houses against, and proceed to the forest to collect some flowers and fruits including mango, mahua, and plums. In every house plenty of rice, dal and curry are cooked and distributed extensively among the kith and kin. In the evening the bachelors start playing their Dudunga and the spinsters join them in singing and dancing. The dancing and singing party moves from one ward to the other. While moving they receive from each household a handful of cooked rice and curry which they eat and in expression of their gratitude to all people of the village they please them with their dance and song. No drinking is allowed on this day. But chewing of tobacco or smoking of bidi is not forbidden. At this time the village Jani goes from door to door and collects from each house some Kandula which he fries at Nisani Munda or Jhankara Debi after offering proper prayers and people are permitted to eat kandula.

From the third day onwards for three days there is feasting and drinking in the village to the fullest extent. Food is cooked in every house and collected at Berana Munda and all people of the village eat together contented.

Except the village headmen all other men go out on hunting as a matter of compulsion. If any one stays behind and does not take part in hunting, he is humiliated by the ladies of the village. What these ladies do is to throw cow dung at him and force him out of the village. No one escapes this humiliations. It is the duty of the women to carry food into the forest for the hunters. In the meantime the young unmarried girls who stay behind go on singing so loudly, that the whole surrounding is resounded with their music. On their way back home from the forest the married women collect varieties of flowers from the forest and on reaching the village they adorne the non-Paraja youths of the village with these flowers. If any outsider visits the village at this time the spinsters of the village throw cow dung at him and ask for money (Suk) from him with great affection.

Hunting goes on for three or four days during the Chaitra Parba. If they get any hunt they believe that they will get very good crop in the current year. In otherwords any success in hunting means plenty and happiness throughout the year. The animal that is caught during hunting is brought to the village and kept at Nisani Munda and the whole night is spent in dancing and singing. Next day the animal is cut into pieces and a portion of meat is given first to the village headman and the remaining portion is distributed equally among all others of the village. In the evening the village Jani carries on some worship under the tree at the outskirt of the village. What he does is to hang a leaf-cup full of cooked rice from his own house in the tree and sacrifices a fowl. This is called, "Jani-Bhata-Poda Bindhe".

Next day the village Jani offers prayers at the Nisani-Munda after which the Chaitra-Parba comes to an end. When the village Jani is present at the Nisani-Munda others of the village also assemble at that place, each of them carrying with him some crops in a winnowing fan. The village Jani mixes all the crops brought by the villagers, utters some incantation and spreads all around. While the Jani spreads the grains up and around the place the villagers lift each of their winnowing fans above and look up to see that some grains fall in their respective winnowing fans. Each of the villagers mixes some more seeds with those collected ritually and sows in the fields. This is the time when the wife of the Chalan bathes the village Jani and village Disari with ash mixed water. Thereafter the able bodied adult men of the village carry the village Jani on their shoulders from Nisani Munda to his house, with the accompaniment of dance and music. This is the end of the Chaitra-Parba.

The tune, rhythm of the song and dance familar to the Paraja community are nameless. They compose rhythm and tune of the dance and music in imitation of the manner in which the snakes crawl, the frogs jump, and the birds sing. The prsence of mind and common sense of the Paraja are remarkable. They compose songs in confirmity to different situations and apply rhythm appropriate to the music. The cloud, the wind, the ripples, the sound of the steam have considerably influenced the tune of their music. Living freely under the sky and in the recess of the hills, the Paraja carry on without any inhibition, singing and dancing which resound the surrounding throughout the year. It is true that the composers of the Paraja songs may remain obscure, but each stanza of the poems and the songs which fill with rhythm of the light and pleasure, the dark recess of the hills far from the madding crowd of the so called civilized world unparalleled. The self-composed songs and self-made musical instrument (Dudunga) provide entertainment beyond measure not only to the Parajas but to the whole humanity. These are objects of greatest attraction to the entire human society. But look at their low level of education which has been responsible for all the blind faiths and beliefs which they confirm and practise unattenuated in numberless festivities. The Paraja exhibit a combination of two opposits, on one side the impoverishment and indebtedness caused by their lack of future orientation and on the other, their cheerful face, fellow-feeling, community life and hospitality which stem from their rich aesthetic life and recreational activities.

Revenue Minister Shri Sriballav Panigrahi distributing old age pension certificate to a distressed Woman at Attabira on January 1, 1977

REGIONAL RESEARCH LABORATORY, BHUBANESWAR

Prof. P. K. Jena

The Regional Research Laboratory, Bhubaneswar a multidisciplined national laboratory situated in the eastern region of the country, is engaged in various investigations relating to the development and utilization of vast and varied natural resources of the country and particularly of the eastern region. In addition, the laboratory provides technical assistance to the State Government, industries and educational institutions and has been active in generating in various ways an atmosphere for the development of industries and various infrastructures by utilising the finding of the research and development work carried by the scientists.

The R. & D. activities of the laboratory have been grouped into following nine major disciplines keeping in view of the natural resources of the region: —(1) Mineralogy and metallography, (2) Mineral beneficiation, (3) Pyrometallurgy, (4) Hydro and Electrometallurgy, (5) Special materials, (6) Design and project engineering, (7) Inorganic chemicals, (8) Forest and marine products, (9) Aromatic and medicinal plants.

The projects completed on bench scale and need to be undertaken on pilot plant scale to assess their commercial viability are : (1) Extraction of nickel and cobalt from lateritic nickel ores of Orissa, (2) Synthetic rutile from ilmenite, (3) Reduction of phosphorus content of high phosphorus manganese ores, (4) Beneficiation of natural magnesite, sillimanite, kyanite, (5) Cold pelletization of chromite ore with our without beneficiation, (6) Extraction of vanadium from the Bayer's sludge of aluminium plant, (7) Production of sponge iron by utilising low and off grade fuels and (8) Cultivation of *solanum khasianum*.

Seven sponsored projects have been undertaken by the laboratory namely: (i) Evaluation of high density pilyethylene (HDPE) pipe for pipeline transportation, (ii) Beneficiation of low grade limestone, (iii) Evaluation of sulphide ores of Rajasthan and, (iv) Survey of potential salt areas along Orissa cost, (v) Synthetic rutile from ilmenite, (vi) Manufacture of slog wool, (vii) Beneficiation of andalusite.

The following processes have been translated to industries: Fluid energy mill, beneficiation of natural graphite, steam distillation unit for extraction of essential oils, hand operated bellow pump, methyl anthranilate from phthalic anhydride, strychnine and brucine from nux-vomica seeds, synthetic iron oxide red,, ultrasonic therapy unit and cottage scale production of fish meal.

The following process have been referred to NRDC and ready for Commercialisation :—(i) Preparation of high purity graphite, (ii) Refractory bricks from fly-ash, (iii) Electrolytic iron powder from iron chloride solution, (iv) Grinding and lapping compounds utilizing palm oil sludge, (v) Radio frequency generator, (vi) Device for producing ulterasonic power, (vii) Earth auger, (viii) Food preservation flask.

A Summary of the major activities of the above mentioned nine disciplines are given below :—

Mineralogy and metallography group is engaged in mineralogical, metallographic X-ray and spectrographic studies on identification and quantitative estimation of various minerals present in the ores samples.

Mineral benefication group is engaged in research and development work relating to beneficiation and evaluation of lean and off-grade ores. Investigations on the beneficiation of chromite ores and bauxite deposits of Pottangi in Koraput district of Orissa have been completed.

In the Pyrometallurgy group, R. & D. works relate to high temperature treatment of ores and minerals, including agglomeration of ore fines, extraction of ferrous and non-ferrous metals and alloys and treatment of metallurgical wastes and by-products. A process for the production of sponge iron utilizing reducing gases produced from air-gasifications of high totatile non-cooking coals has been developed.

The R. & D. activities of Hydro and *Electro-metallurgy* group ralate mainly to the extraction and recovery of metals from ores, minerals, concentrates and industrial wastes and by-products through hydro and electro-metallurgical techniques including biochemical leaching. The laboratory has successfully developed processes for the extraction and recovery of nickel and cobalt from lateritic nickel ores of Sukinda, Orissa, for the preparation of synthetic rutile from ilmenite and for the production of electrolytic iron powder of 99·5 per cent purity from reffous chloride solutions. Processes for the manufacture of hot face insulatiton and refractory bricks utilizing fly ash for the manufacture of grinding compound utilizing waste palm oil sludge have been successfully developed.

The R. & D. activities of *Inorganic chemicals group* relate to preparation of inorganic chemicals mainly through utilisation of waste products and by-products of metallurgical and chemical industries, marine resources, and ores/ minerals. Process for the production of synthetic iron oxide red using ferrous sulphate heptahydrate obtained from waste pickle liquor of steel plants has been licensed to a party. Utilisation of waste ferrous sulphate and sulphate liquors for the preparation of black and red iron oxide pigments has been taken up on a large scale. The laboratory is providing technical guidance to the Government of Orissa in increasing their salt production and in surveying the potential salt areas in the State.

Forest and marine products is engaged in R. & D. work for utilisation of forest, marine, agricultural products and by-products and synthesis of industrially important organic compounds. Two processes viz., extraction of strychnine and brucine from nux-vomica seeds and methyl anthronila from phthalic anhydride have been licensed to industry. Pulping characteristics of citronella grass waste have been studied and good quality pulp is obtained. Process conditions for the preparation of isatoic anhydride, methyl anthranilate from phthalimide and tartaric acid from maleic anhydride have been standardized. A fish meal plant for the production of fish meal in cottage scale sector has been designed, fabricated and its performance satisfactorily evaluated.

The main objective of *Aromatic and Medicinal Plants Group* is to select suitable crops to initiate their introduction and cultivation in Orissa region. The following plants have been introduced and their experimental cultivation have been taken up :—*Annethum graveolens, Cymbopogon winterianus, Eucalyptus citriodora, Cymbopogon martinni, Ocimum basilicum* and *Cinnamomum zeylanicum Ammi majus* and *Solanum khasianum.* The technical know-how and plant materials are being supplied to various organisations for cultivation purpose.

The *Design and project engineering group's* activities relate to developmental work on engineering projects of national importance, design and development of electronics devices, mineral and chemical process equipment and to prepare feasibility and project reports.

The laboratory takes up projects sponsored by the industries, prepares feasibility reports, provides consultancy services in solving the technical problems of the industries and offers testing and analyses facilities. The laboratory organises periodiially research and industry get-together, seminars and symposia on specific subjects of importance to the industries of this region.

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Director,
Regional Research Laboratory,
Bhubaneswar.

ସମାଜ

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ଓଡ଼ିଶାର ସର୍ବାପେକ୍ଷା ବହୁଳ ପ୍ରଚାରିତ

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- ପ୍ରତି କଲମ୍‌ର ଓସାର—୪·୫୦ ସେ. ମି.
- ପ୍ରତି କଲମ୍‌ର ଦୈର୍ଘ୍ୟ—୫୦ ସେ. ମି.
- ପ୍ରତ୍ୟେକ ପୃଷ୍ଠାର କଲମ ସଂଖ୍ୟା—୮
- ପ୍ରତି ପ୍ୟାନେଲ ର ଆୟତନ—୧୧ ସେ. ମି. × ୭ ସେ. ମି.
- ହାଫ୍‌ଟୋନ୍ ସ୍କ୍ରୀନ୍—୭୫ ପର୍ଯ୍ୟନ୍ତ

ଗୋପବନ୍ଧୁ ଭବନ, କଟକ-୧ · ଓଡ଼ିଶା

SMALL SCALE INDUSTRIES IN THE SPHERE OF CHEMICAL AND ALLIED INDUSTRIES

Shri D. P. Bhattacharya

The development of small industries in general, in the past was negligible. A few big and medium industries were set up during the second and third five-year plans. In spite of the establishment of such big and medium industries, it did not generate any "spread effects" for the small-scale sector. A few small-scale industries came up particularly, in some selected towns and cities mostly based upon the agricultural resources and forest resources. These industries were mainly rice mills, oil mills, saw mills, some carpentry units and some light engineering units. The pace of small industries development was quite slow because of several factors. The main factors responsible for this stunted growth of small-scale sector were lock of infrastructure, availability of requisite inputs and the absence of institutional support. It is only during the 1970, that consistent and co-ordinated efforts were taken by the Institute and the State Directorate of Industries for developing small industries in the different growth centres and points by organising intensive campaigns, growth centre campaigns and other promotional activities. Now a congenial industrial climate has been created where small industries can develop by availing of package incentives.

The state is rich in resources: agricultural, forest, mineral, marine, etc. Hundreds of industries can be set up on the basis of these resources. There is a necessity of formulating a plan of action for the development of small-scale industries particularly resource-based ones. In order to initiate a rapid growth of industries in the State, there is necessity of laying a good and sound infrastructural base, creation of sophisticated process development centres with testing facilities, provision of effective consultancy services by the SIDO and creation of adequate marketing facilities for the small-scale industries. Incidentally, it may be mentioned a Branch Institute is coming up at Rourkela and another is likely to come up at Rayagada. The Small Industries Service Institute, Cuttack, with its branches at Rourkela and Rayagada will be able to cater to the techno-economic and techno-managerial needs of the potential entrepreneurs and will help them in proper identification of items and implementation of the selected projects.

Chemical and allied industries have not made any strides in the past, though the fact remains that there lies tremendous scope for development of large number of chemical and allied industries. The by-products of the Rourkela Steel Plant, the ancillary requirements of the big and medium industries, the agricultural product, the forest produce, the mineral and marine resources and a number of consumption requirements can boost development of hundreds of small-scale industries. In order to develop chemical and allied industries it will be better if certain specific industrial complexes come up in the State.

Even though chemical industries rank second among the manufacturing industries in the State of Orissa, it is yet to make sufficient headway taking into consideration the availability of rich mineral, forest, agricultural, marine and other natural resources, and a host of primary raw materials, leaving aside the deposits of iron and manganese ore for which scope of small-scale chemical industries is limited, limestone and dolomite occupy the next important place. These two minerals are among the other basic raw materials required for the cement industry and mini-cement plants in the small sector may be set up. In addition, this mineral offers bright future for the production of industrial lime, precipitated calcium carbonate calcium chloride, etc.

The availability of bauxite can be effectively utilised in the manufacture of various types of alums. Other important minerals like china-clay and quartz can be used for the development of glass and ceramic industry. Deposits of graphite and soap stone play a major role in refractories, electrical product and paper, rubber industry respectively.

The development made in respect of mineral based chemical industries is not up to the mark. There are only one graphite benefication plant and two ferric alum manufacturing units. These two ferric alum manufacturing units are also not using the bauxite available in the State because of poor quality of ore. The various Research Organisations in the State should come forward to evolve a method for the setting up of small-scale benefication plant to utilise low grade ore. Without pulphuric acid plant which comes in the medium sector in the State small-scale chemical industries, e.g., sulphates of ammonia, copper, aluminium, magnesium, zinc, iron, etc. organic acid such as oxalic, citric, tartaric may not be in favourable competitive position as against the units existing in other parts of India where sulphuric acid is available at low price, without any scarcity from the local Sulphuric Acid Plants. The State Government or Public Corporation should come forward to put up sulphuric acid plant to support such industries.

Orissa is rich in agricultural resources like paddy, sugarcane and oil-seeds. Few units successfully exploited the availability of rice bran for the production of rice bran oil, straw for the manufacture of strawboard. A few units for the manufacture of activated carbon based on paddy husk are under consideration. Based on the mollasses availability from sugar plants two units started manufacturing industrial alcohol. This Institute has also suggested a unit for the manufacture of oxalic acid based on the molasses. Oil extraction is an age-old industry in the State. About a couple of hundred units are engaged in the extraction of oil by mechanical process. A few plants utilised the oil-seed cake which is a good source of oil by solvent extraction methods. What Orissa needs is a good refining and hydro-generation plant, which is likely to come up in near future at Dhenkanal.

There is scope for the creation of good number of chemical industries based on the forest resources like Mohua flower, genduli gum, Khair wood, seed lac, myrobalan cashew and tamarind seeds, the help of immensely available soft wood, which is the most important raw material, a 'safety match' complex can be thought of. The existing auction policy for soft wood may be suitably oriented to meet the need of the existing three match units in this State which are facing a lot of problems in procuring the soft wood. The voluminous quantity of saw dust available from saw mills can be used for the manufacture of saw dust, briquette, oxalic acid and card-board.

Marine fishing is a seasonal industry in Orissa. Based on the big volume of catch a few ancillary industries like cold storages, ice plants, fish canning, fish meal, fish oil, shark liver oil have already started functioning in the coastal areas.

Orissa's small scale pharmaceutical industry mainly consists of processing units only. These units mainly manufacture tinctures, syrups, extracts and tablets of different basic drugs. A few of them are also equipped for the manufacture of injectules and capsules. Great scope exists in the manufacture of drugs based on medicinal plants. Processes for such extraction have been developed by the Regional Research Laboratory, Bhubaneswar.

The next highly concentrated chemical industry is plastic conversion industry. Number of units are existing based on the L D and H D polyethyline for the manufacture of consumer and industrial articles.

In the year 1974 eight units were encouraged for the manufacture of intermediate acid slurry and detergent slurry. Even though these units started manufacturing, for want of market these are facing problems. State Government should immediately think of putting up one detergent powder manufacturing unit in medium scale, so that the existing industries can survive.

In recent years, much emphasis is given to development of ancillary and auxiliary chemical industries. Creation of these types of industries can only be achieved by the active co-operation of mother plants, State Directorate, Financial institutions and S. I. S. I. In the State of Orissa, the scope though limited, because of the small number of large and medium scale industries, the H. S. L., Talcher Industrial Complex and Jayshree Chemial, Ganjam, provide good opportunity to start chemical industrial complexes.

The chemicals which can be manufactured based on the by-products of coal carbonisation plant of H.S.L. at Rourkela are many.

The by-products available at Rourkela are mainly Benzene, Toluene, Naphthalene, Pitch, Solid Anthracene, Phenol, O-Cresol and M. & P. Cresol.

With the availability of benzene there is scope of development of organic intermediates like nitrobenzene, aniline, chlorobenzene, para-chloro-nitrobenzene, dimetheyl aniline, methylaniline, maleic anhydride, etc. So far, only one unit is in sight in the Rourkela Industrial Estate manufacturing nitrobenzene.

Toluene may be effectively utilised for the manufacture of its derivatives, namely chloro, toluene, nitro chloro toluene, nitro toluene. Benzaldehyde, a valuable chemical, can also be obtained by alkaline hydrolysis of benzalchloride obtained in turn by the chlorination of Toluene. This plant is quite flexible in that toluene may be chlorinated to benzyl, benzal and benzol chlorides which in turn may be hydrolysed to benzal alcohol, benzaldehyde and benzoic acid respectively. Naphthalene on air exidation over vanadium pentoxide as catalyst yield phthalic anlyaride which is used in the manufacture of phthalate plasticizers, alkyd resins dye and pharmaceutical industry.

Anthracene is important chemical intermediate for synthesis of anthraquinone.

Another industry utilises the waste pickling liquor for the manufacture if pigment grade red oxide.

In view of the tremendous scope for industries based on by-products from steel plant a potential industrial complex can be expected at Rourkela in the next few years.

The Talcher Industrial Complex consisting of Fertiliser Plant being set up by the Fertilizer Corporation of India, Thermal Power Station, Central Coal Fields Ltd. offer a limited scope for the development of small scale chemical industries. Recently, the ancillary advisory committee of Talcher Complex requested the S.I. S.I. to identify the potential items which can be developed as ancillary and auxiliary units. The report is under preparation and this will enlighten the prospective entrepreneurs to choose the items.

Though Jayshree Chemicals at Ganjam manufacturing caustic soda provide no scope for the creation of ancillary industries, variety of chemicals based on caustic soda and chlorine can be well thought of.

A few units based on caustic soda and chlorine have already started their production in early and middle of seventies in the State. Special mention should be made of chlorinated paraffin wax units. Two units are engaged in the manufacture of CPW in this State. Planning an industrial estate for chlorine based chemical industry at Ganjam near Jayshree Chemicals will minimise the transportation difficulty of chlorine and the difficulty in getting chlorine cylinders chlorine should be drawn in pipe line to this industrial estate to cater to the need of small industries. If this is achieved variety of chemicals like chlorobenzene, bleach liquor, bleaching powder, aluminium chloride, chlorophenol.

Chlorinated rubber, ammonium chloride, chlorinated toluene, etc. can be developed.

Caustic soda available from Jayshree Chemicals at Ganjam will be a basic raw material for many chemicals like tri-sodium phosphate which can be used in detergent powder industry menioned in earlier part of the paper and sodium nitrate which is required in large quantity by I. D. I., Rourkela. A few units for the manufacture of sodium nitrate and TSP are in the infant stage.

Lastly, regarding the paint units, there are six paint industries located in the various parts of the State. The total installed capacity of all the units is Rs. 60 lakhs and the quantity of paint they manufacture is about Rs.40 lakhs which itself speaks of its worthiness.

To sum up, Orissa presents a paradox being a "poor State having rich resources" Only keen co-operation among entrepreneurs and various departments of Government financial institutions, development of entrepreneurship will improve the present state. This can be achieved when the new class of entrepreneurs, namely educated entrepreneurs come forward to start new industries.

In order to develop chemical and allied industries in a planned manner, the following steps should be taken by the State:—

(1) Proper identification and quantitification of different types of resources available through techno-economic survey;

(2) Quantitification of different mass consumption items in the State;

(3) Development of different processes for the manufacture of items based on the rich resources of the State; particularly, in the small scale sector.

(4) Development of designs, drawings and proto-types;

(5) Establishment of specific chemical and allied industrial complex;

(6) Production of sufficient infrastructural facilities by the State Government and other organisation. Priority may be given to the backward districts;

(7) Drawing up of a well-co-ordinated action plan for each growth centre and implementing the same by all agencies in right earnest ; and

(8) Periodic evaluation and monitoring of the progress and removal of bottlenecks and providing corrections where necessary.

This will be greatly supplemented by the experts available in the Institute particularly, in the sphere of tecnical assistance and guidance, development of entre preneurship and training which are the basic inputs for successful implementation of any small scale industries development programme.

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Director, Small Industries
Service Institute,
Government of India, Cuttack

Shri C. P. Majhi, Union Deputy Minister for Fertilisers and Chemicals delivering the inaugural address at the Orissa Engineering Congress on January 10, 1977 at Bhubaneswar

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EXTENSION OF ANIMAL HUSBANDRY TECHNOLOGY FOR THE FARMER

Shri J. N. Panda

Government are utilising Animal Husbandry Programmes as an effective tool to improve the economic condition of less-privileged people of the society, such as small and marginal farmers, scheduled caste/tribe population, educated unemployed as well as people in the low income group level since animal production activities are less prone to weather fluctuations and can ensure a reasonable return relatively at a lower investment and at the same time provide a steady income througout the year, a number of programmes have been taken up throughout the State of Orissa for the betterment of the farmers.

CATTLE DEVELOPMENT

A programe of Cross-breeding with exotic inheritence has been intensified in the entire State through introduction of exotic breeds of Bulls like Jersey. Holsetein-Frisan and Brown Swiss, to accelerate augmentation of milk production. To enable the programme covering a large number of farmers all over the State, the strength of the exotic bulls was increased from 76 in 1973-74 to 131 in 1975-76 and, with the increased production of breeding material, the number of areas under coverage of exotic breeding was raised from 259 to 570. To ensure supply of quality semen and thereby to optimise the breeding efficiency, the unmber of Semen Collection Centres has also been increased from 14 to 24. All the Districts are now fully self-sufficient with regard to this important pre-requisite. The exotic insemination and the number of exotic progenies born have already shown an appreciable upward trend. Against an exotic insemination of 54,280 in 1973-74 which was 30·6 per cent of the total inseminations, the figure has gone up to 1,28,934 in 1975-76 with a percentage of 57.4%. To meet the requirements of exotic bulls, the State Livestock Breeding Farm, Chipilima is being converted into an Exotic Cattle Breeding Farm. Government of Denmark have already agreed to supply 300 animals of Jersey and Holstein breeds. To increase their productivity through progeny testing, Government of India have already sanctioned a Centrally sponsored Scheme for implementation at this Farm.

A Frozen Semen Bank sanctioned by the Government of India for establishment at the Centralised Semen Collection Centre, Khapuria, Cuttack will also be complementary to the cross breeding programme. Government of Denmark will provide required machinary with proven bulls and technical expertise.

PACKAGE PROGRAMMES

An intensive Area Development Programme has also been initiated and three Intensive Cattle Development Projects, each covering 50,000 breedable cow population have been established at Berhampur, Sambalpur and Jeypore (Koraput) in addition to the existing one at Cuttack. One Key Village Block with the same approach and objective has also been established at Betnoti (Mayurbhanj) covering 10,000 breedable cows bringing the total number of K. V. Blocks in the State to 25. In these programmes, all the required inputs and services are made available to the farmers as a package deal.

SMALL FARMERS PROGRAMME

Cross-breed progenies born with exotic inheritance require better feeding, management and disease control measures to exhibit their genetic worth. Since the farmers were not used to feeding their live-stock with feed the small and marginal farmers and landless agricultural labourers are given subsidy to feed the calves from 2nd month to 28th month by which time a properly managed heifer should give birth to a calf and when a portion of the sale-proceeds of milk can pay the feed bill. At present 1,162 farmers are receiving this assistance, Under the S.F.D.A., M.F.A.L., T.D.A. and other Tribal Development Programmes, 2,667 farmers have also been assisted to maintain dairy animals as a commercial proposition.

BUFFALO BREEDING

For the first time, a Buffalo Semen Collection Centre has been established at Gunupur (Koraput) to provide improved breeding facilities in Parlakhemundi and Gunupur areas through Artificial Insemination where the buffalo population is quite sizable.

FEEDS AND FODDER

Fodder cultivation programme has been intensified to gradually persuade the farmers to produce their full requirement of fodder from their land either by setting apart a small area for the purpose or by raising catch crops or mixed crops. 6,200 farmers have been given seeds of better varieties of fodder and pasture grasses free of cost. To make the State self-sufficient in its requirements of fodder seeds, 3 Seed Multiplication Farms have been set up at Panchamahal (Angul), Salpada (Keonjhar) and Chipilima (Sambalpur). Land available at the Veterinary Institutions all over the State have been utilised for fodder cultivation. These units act as demonstration, extension and multiplication centres in respect of this important discipline. The Animal Husbandry Department also took advantage of the Government of India's Minikit Programme and extended the Minimit facilities to 200 farmers during 1975-76 Rabi season. Appreciating the response from the farmers, Government of India alotted 400 Minikits to Orissa during the last Kharif season which is the highest number given to any individual State. Besides, during the current Rabi season of 1976-77, 200 Minikits with Berseem seeds have been distributed amongst interested farmers.

Pasture Development Programmes have also been initiated at a number of places covering forest areas, gochar land and other Government waste land. The World Bank Pasture Development Expert assigned to Government of India has appreciated the efforts being made in this direction. Drought resistant varieties of leguminous and non-leguminous pasture grasses have been procured from Rajsthan, Maharastra, Karnataka and Thailand for multiplication during the current year and for utilisation over a large area in the following year. Steps have also been taken to import from Phillipines Ipil-Ipil seeds which can be grown as hedges and can be a good source of fodder for the live-stock. Extension materials by way of literature and films are under preparation for education of the farmers in the field of fodder production.

Facilities available at the Feed Mixing Centres have been utilised to manufacture balanced feed for cattle and pigs in addition to Poultry feeds. These Centres have extended their activities to ensure supply of such feeds to the live-stock owners in different parts of the State. The Orissa Agro-Industries Corporation have also taken up this activity of compounding feeds at a number of places to extend the coverage. Efforts are constantly being made to utilise locally available industrial and agricultural by-products to bring down the cost of feeds.

DISEASE CONTROL

Though the cross-breed progenies with 50 percent exotic inheritance have shown very good adaptability to the local climatic conditions, the need for ensuring adequate health cover to these improved cattle has been keenly felt. Subject matter Specialists have been provided at District, Range and State levels to enable introduction of scince and technology in Livestock farming as well as in its allied activities. The present number of 374 Veterinary institutions are also being increase to cater to the needs of the farmers. Besides, the 192 Livestock-Aid Centres now functioning in conjuction with Veterinary Dispensaries are proposed to be shifted for opening new centres, to extend the coverage still further. The present strength of Livestock-Aid Centres including A. I. Sub-Centres, K. V. Sub-units, I. C. D. P. Sub-units stand at 2077.

The Orissa Biological Products Institute has been expanded to increase its capacity for manufacture of vaccines required to protect the animals and birds against various contagious diseases. To immunise the exotic and cross-breed animals against Rinderpest, manufacture of Tissue Culture Vaccine has been taken in hand. Vaccination of cross-breed animals against F.M.D. is being encouraged by subsidising on the cost of vaccine to the extent of 50 percent.

MARKETING

To help the producers to get a reasonable price for their produce, they are being assisted technically and financially to from Primary Milk Producers' Co-operative Societies. 70 such societies have already been registered and 30 more are in the process of being registered. The Societies in the districts of Cuttack, Puri Dhenkanal, Sambalpur and Ganjam have federated into District Milk Producer's Co-operative Unions. Another such Union is proposed to be organised in the District of Balasore during the current year. The State Government have contributed share capital to these Unions to make them credit-worthy and to provide them required technical leadership to facilitate working in the Co-operative Sector, the Director of Animal Husbandry and Veterinary Services has been given statutory powers of an Additional Registrar of Co-operative Societies in respect of Dairy Co-operatives. A programme has been launched to revitalise Milk Plant at Phulnakhara and to increase its collection to at least 10,000 literes of milk per day.

The Utkal Gomangal Samiti have set up four Pilot Centres for separation of cream from milk with the use of Cream Separators. Cream separators have been installed at Mahakalapada, Angalo, Ghanteswar and Kasipur where the farmers can use the facility for separation of their milk free of cost.

SPECIAL PROJECTS

A Special project for rearing of cross-breed calves through Small and marginal farmers and landless agricultural labourers has been implemented in the Districts of Cuttack, Puri and Dhenkanal from the current financial year. In the districts of Cuttack and Puri, 5,000 families and in Dhenkanal ditsrict 2,500 farms will be given financial assistance @ 50—662/3 percent as subsidy and the rest as loan from Commercial Banks to rear cross-breed female calves from 2 to 28 months age. The subsidy will be given in shape of premixed feeds.

Another special project known as 'Operation Flood' is also likely to be sanctioned during the current year by the Government of India. This project will be implemented in the Disetricts of Cuttack, Keonjhar and Dhenkanal. It aims at augmenting milk production through cross breeding, better feeding, improved management practices, disease control measures and establishing a milk grid with Calcutta. For the command area of Mahanadi Delta, Hirakud and Salandi, a World Bank Project for the development of drought bullock power for agricultural purposes at an estimated cost of 3·5 crores is also under processing.

POULTRY DEVELOPMENT

Realising that poultry farming ensures a quick turn over of capital investment and provides employment opportunities to a number of people, the State Government have laid considerable emphasis in streamlining poultry development programmes. In addition to the two Intensive Poultry Development Projects at Cuttack-Bhubaneswar and Rourkella, established by the end of the Fourth Five-year Plan, one more Project has been established at Berhampur. The farmers are being assisted with technical expertise, financial help and inputs to set up Poultry Farms of 100 layers each. Marketing assistance is also being extended to them to ensure a reasonable return for their produce.

Government have also allowed Poultry Co-operative Societies to use poultry houses earlier constructed under the Applied Nutrition Programme, for setting up poultry farms. Already a start has been made at Purusottampur and Chikiti in the District of Ganjam.

With a view to enabling the private poultry farms to run on efficient and commercial lines, a programme for production of genetically superior stock has been taken up at State Poultry Farm, Angul in collaboration with the Technical Wing of the Government of India. Balanced Poultry feeds, utilising as far as possible locally available agricultural and industrial wastes, is being marketed by the Feed Mixing Centres of the Animal Husbandry Department as well as by the Agro-Industries Corporation. To bring down the cost of feed, a Carcass Utilisation Centre has been set up at Cuttack for manufacture of meat meal and bone-meal out of fallen carcasses. To provide required marketing assistance to the farmers, 14 Poultry Co-operatives have already been organised and a State Level Marketing Federation has also been set up affiliating these Co-operative Societies. The State Government have contributed to the share capital of the Federation with a view to providing technical leadership.

To intensify Poultry Development Programmes further, a Centrally sponsored scheme has been sanctioned by the Government of India for implementation in the district of Cuttack, Puri and Sambalpur from the current financial year. For each of these districts 3,000 farmers will be given financial and technical assistance to set up poultry units of 50 layers each. Out of the total capital investment required 25 to 33½ per cent will be available as subsidy and the remaining amount will be arranged from Commercial Banks as loans. In the S. F. D. A., M. F. A. L. and other Special Projects, a large scale programme of upgrading the indigenous stock with improved cocks has been taken up. The programme aims at maintaining 50 per cent indigenous blood level in the crossbred progenies, so that they will be able to adapt themselves to the local agro-climatic conditions better almost at par with the indigenous ones. Besides, 1,304 farmers have been assisted in setting up poultry units with layer strength varying from 25—100.

Broiler production is another field, which can provide employment opportunities to farmers. To demonstrate the relative economics and to educate the farmers in the art management, a broiler unit has been started at Bhubaneswar; broiler chicks are being procured from a reputed hatchery in Calcutta every fortnight and broilers are being marketed at the age of 8—10 weeks. The operation is being run purely on commercial lines.

To initiate programmes for development of ducks an officer has been trained in Hungary in the latest technology for Duck keeping.

SHEEP AND GOAT

Programme for multiplication of Sheep and Goat has not only increased the production of animal food but has also provide livelihood to a large number of farmers. Under such special projects, viz., M. F. A. L., S. F. D. A., T. D. A., I. T. D. P. etc., 8,000 farmers have been given financial assistance by way of grant and loan to maintain goats. Most of the farmers have repaid their loans well ahead of the scheduled time and have earned assets for maintaining a higher economic standard. With a view to increasing the milk yielding capability of the goats, a programme of upgrading the local stock with Beetal Bucus has been introduced and 600 bucks have already been purchased from the Punjab and supplied to the special projects for distribution amongst farmers. to attain self-sufficiency in respect of such animals, one Goat Farm has already been established at the State Livestock Breeding Farm, Chiplima and another one in the district of Phulbani under D. P. A. P. programmes for multiplication of Beetal Goats. Action is under way to regulate a number of Livestock Market to ensure optimum returns to the farmers.

In respect of Development of Sheep, for the first time, Coordedale rams have been introduced in the State to increase the production of wool. In addition to one Sheep , Breeding farm at Chiplima, another farm has been established at Deogaon in Balangir District. Local ewes are being purchased for starting the above upgrading programme at that farm. Simultaneously, extension programmes have been taken up in the district of Sambalpur, Balangir, Kalahandi and Phulbani under which rams with 50 per cent exotic inheritance are being distributed for improving the local stock. An exchange programme has also been introduced under which farmers are given 5 ewes and a ram on condition that they would return the same number of animals over 18—24 months' time, which are subsequestly distributed to other farmers on the same conditions. This self generating programme has received good response in the hands of the farmers.

PIGS

Piggery Development now has been given a place of priority in the field of Animal Hussbandry. Government of India has sanctioned a Centrally sponsored scheme for assisting 500 farmers in each of the districts of Keonjhar and Koraput to take up pig farming as a commercial enterprise. The beneficiaries will be given assistance at the rate of 25 per cent for small farm and at the rate of 33 1/3 per cent for Marginal farmers and agricultural labourers as subsidy. The remaining amount needed will be available from Banks as loan.

191 units of 2 Sows and One Boar each have been established by the existing S. F. D. A./M. F. A. L. Projects. Under the D. P. A. P., Phulbani, a Pig Multiplication Unit has been set up at Bhanjangar to ensure adequate supply of cross-breed male and female piglets with 50 per cent exotic inheritance. The pig farm at Chipilima is propagating the seed stock for development purpose.

TRAINING OF PERSONNELS.

To provide required manpower for the Animal Husbandry Programme, 3 Livestock Inspector Training Centres have been established at Balangir, Chiplima and Sundergarh with capacity of training 100 candidates per centre each year. The State Government also awards stipends to suitable candidates selected by the I. C. A. R. through open advertisement, for undergoing B. Sc. (Dairy) and I. D. D. training at Bangalore, Karnal etc. An Inservice Training Centre at Bhanjanagar helps the officers to brush up their professional knowledge by undergoing periodical training at the said centre.

Training facilities are also being extended to the farmers. During 1975-76, 23 farmers were deputed to the National Dairy Research Institute, Kornal Kaira District, Milk Producer's Union at Anand for studying the Dairy Development Programmes in those areas.

Director of Animal Husbandry and Veterinary Services, Orissa, Cuttack

The Gopabandhu Hostel, the second hostel of Titilagarh D. A. V. College, was inaugurated by Dr. A. N. Khosla, ex-Governor of Orissa

VOCATIONALISATION OF EDUCATION

●

Shri Ghanashyam Panda

Economics of Education

The remarkable past-war recovery of countries which suffered from large scale destruction of plant and equipment during war shows that much of the human capital which escaped destruction was responsible for this. In case of under-developed countries, the low absorption capacity of additional capital is due to low human resource development. The new additional capital from outside generally goes into the formation of structures, equipment and inventories. It is generally not available for investment in man. Consequently, human capabilities do not keep face with physical capital and become limiting factors in economic growth.

Important activities that go to improve human capability are:—

1 Health services and facilities
2. Job training
3. Formally organised education
4. Study programmes for adults
5. Migration of families

Back Ground

Out of these, education is the most important and measurable component. The considerable rise in earnings we find arround us is due rapid rate of investment in education. The Education Commission reported that during the first three plans national economy grew up by 5·4 per cent while educational expenditure grew up by 11·7 per cent. The rate of growth in educational investment is twice as that of national income growth (or ability of the nation). The growth might have been quantitative. The growth might have been in directions without relevance to national needs.

Our education itself has largely been imitative and we did not care to look into the purpose of our education. Education has become largely fund oriented with neglect of rising future generations. It has no distributional spread of educational imputs among districts, social classes and even two sexes. It has been a stretching of the traditional system with a marginal change of technique and contents.

Education Commission views the defect to be serious and suggested remedy in the shape of reforms. They said, "No reform is more important than to transform education to endeavour to relate it to life, needs and aspirations of the people and thereby make it a powerful instrument of social, economic and cultural transformation necessary for realization of national goals". One of the goals to achieve through education is productivity. Spelt in terms of economics, the end is incremental national income. The means of such a reform in education are :—

- —Science to be the basic component,
- —Work experience to be an integral part of general education.
- —Vocationalization of education, to meet the needs of industry, agriculture and trade.

The present discussion will be confined to vocational education. Vocational education is given to students in order to enable them to work in industries, agriculture and other activities mainly in tertiary sector (i.e. industry, agriculture other than heavy and primary industries). So far utilization of human resource are concerned this sector constitutes the main source of absorption.

Manpower Planning and Vocationalization

Problem related to vocational education is part of the wider problem of manpower planning. The objective of such planning is to provide the planners of education with data of future needs for personnel with different kinds of training. This data must be supplemented by the data regarding the measure of failure of the present education to evoke progress.

One precaution is necessary. In India there is regional diversity imbalance by sex and skills. If one takes aggregated data of G. N. P. and Investment in education, he will discover the correlation to be high. But in fact the aggregative conclusion would be very much farther from real facts due to disparity in spread of education by region and by skill.

The paper attempts to encompass the sphere of Commerce education in the present scheme of vocationalization of education. Vocationalization is defined as forgoing a link between education and productive including orientation towards job. Job may be difined as assisting meaningfully through employment by achieving productivity may be through service. In fact sectoral shift has occurred in many countries.

Shift in Industrial Demand

In recent years there has been a shift in pattern of employment infavour of tertiary Sector., (Osmanibad District Project of Maharastra). In OECD countries they experiencing a shift from industrial to service economy. (OECD obsene February 1967). Since 1968, the employment has not been commensurate with increase in industrial production in India also.

Base 1951=100

		Employment	Production
1966	..	0·59	(—)0·17
1967	..	1·23	0·85
1968	..	(—)0·04	6·42
1969	..	0·86	7·06
1970	..	2·90	4·82

The factory sector has been able to absorb only about 2 1/2 per cent of total addition to labour force during the last decade. This is mostly true because of heavy industry. They were meant to be an industrial strategy to accelerate economic growth and to spend up industrialisation. Employment perse was not considered an adjective. It was left to tertiary Sector. The management in such industries and trade represent the demand for Commerce education. The employer's view point in this regard may be worthy of consideration. Guardian some time ago commented that "there is no clear picture of the demand which Commercial education is trying to meet, perhaps businessmen are themselves not too sure about it". (After month of Meaning Report, on education in Commerce in U. K. 1959) N. G. Shahane, Manager (Personnel) TELCO, in a recent ulterance summarised the Employers' viewpoint in India. He made it very clear that the industrial units are naturally out for profit, and thererfore, it will be wrong to expect that they should absorb the material below the standard.

1. If the earlier comment indicates to identification of goal, the latter one' points upto the measure or standard. In the contents of education that is job oriented, the gap between the candidate who is seeking employment and the employer who is willing to accommodate a candidate must be properly identified. This is applicable mostly for the candidates already through.

2. There are others who may prepare for life and will get education. The education to an extent is demand oriented. The demand by planned economy in India is for well trained and efficient office and sales personnel and entrepreneurs. Is the present pattern capable of meeting that demand ? The present pattern of Commerce education in a objective is of course productivity oriented but its output is large and haphazard and of marginal standard. The table below shows the growth of demand for Commerce Education in Delhi University.

	1964	1969-70	1973-74
Science ..	N. A.	16·8%	12·8%
Commerce..	6·4%	N. A.	23 9%

Orissa 1955 226 1976 3000%

Vocationalization with regional bias

At present the imbalance in facilities available is glaring with a bias in favour of Cities and large towns. In higher education of outlay goes to the General Universities, and the average intake of student is also skewed in their *favour*. Average College student population to the total in the country is 5·5, but Delhi has 13·6 whereas Orissa has 2·2. This is true of Commerce education also. Expenditure *per capita* of student in College is 10 times more than at school.

In a under-developed country like India with a stratified population distributed over many regions and sub-regions a balanced rate of sustained economic growth can come from planning of education at the regional and sub-regional level. The peculiarity of the region must be reflected in the educational plan. Development process of education needs motivation. This is a rare imput in back ward areas of the country. Lack of motivation leads to less of will and creativity. Loss of will someothers concern for achievement and urge for excellence in performance.

In Orissa districts are identified as backward. The mobility of labour is low. Industrial growth is slow. A good part of population belong to tribal and Scheduled Caste. Any vocational education must be job oriented at first to groom then for local job opportunities, prepare them for other jobs of National level and for self-employment.

Backward Regions to Vocationalization Some Suggestions

In backward regions the vocational education should comprise of two components. It should be undertaken after formal education and for a specific employement at launching stage. Training for already educated and Studies relating to an employment as distinct from the practice of the techniques of that employment. education for those who are preparing for future. It needs a survey of requirements or demand. Because the subjects which are job oriented in Bombay and Calcutta may not be of utility in a village or rural district. This view point is reinforced by the recommendation of Education Commission and the Central Co-ordination Committee on Vocational guidance. The former urged for career oriented education to youngman of 15—18, who at present insist to be at College. The later preferred career guidance development right at the high school level. But till high schools are ready the Junior College and independent short Courses may be used to do the job. They may form part of syllabi. In planning course contents suggestions—the regions needs for personnel should get priority.

Experiences are enjoyable and fruitful of such courses already conducted at Delhi, Bombay, Poona and other places. The normal courses offered are Secretarial management, Corporate Secretaryship, Cost Accounting, Enterprenuership, bookpublishing and Tourism Courses may embrace education in every kind of business occupation from Office routine to positions of responsibility. Minor routine jobs may suit those who start work at 15—18, year of age. Higher Specialisation at degree and post-graduate degree stages, may be taken up.

Enterprenuership courses may be developed in Collaboaration with Industrial promotion authorities engaged in this work.

Lastly, employment promotion training programmes may be planned. The B. M. College of Poona has conducted such a programme with the Co-operation of Directorate of Employment of Maharasthra for Scheduled Tribes and Castes candidates. It prepares candidates seeking jobs for appropriate profession. At present the minimum quota fixed for employment for Scheduled Caste and Tribe students is not filled in due to their sub-standard performance. It can be remedied by such courses. Special syllabi may be framed for that type of courses with utmost flexibility keeping their needs in view.

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Summary

One of the factors responsible for postwar reconstruction was the human capital which escaped destruction. In India educational investment was twice as high as that of our GNP growth during the last decade. But our education lacks spread effect, and is highly tradional and imitative in charcter.

Education Commission wanted education to generate productivity. It sought the remedy in vocationalization.

Vocationalization is related to manpower planning. In planning scope should be left for regional diversity of needs.

The gap between the job seekers' equipment i.e., training and employers' need must be identified. The needs may comprise of (1) training i.e., the practice of techniques of an employment or (2) Studies about an employment and (3) others like Enterprenuership development and employment promotion programmes.

Commerce Education is vocational in nature. But its output is large, haphazard and sub-standard. Education is market oriented, Commerce Education is in high demand and the planners of Vocational Education in Commerce need precaution to apply care. So that the gap of quality demanded and quality supplied does not become wider. They must keep regional sub-regional needs in view as a priority over other needs. While planning course contents of Vocational education in Commerce.

◆

Lecturer, Deptt. of Commerce, Rajendra College, Bolangir

Revenue Minister, Shri S. Panigrahi, is seen with the R. D. C., Northern, Division, Shri K. S. Srinivasan, I. A. S., on the occasion of Attabira Tahasil inauguration on January 1, 1977

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COMPOSITE FISH CULTURE CAN FACE INDIA'S CHALLENGE OF ITS FRESH WATER FISH REQUIREMENTS

Shri V. R. P. Sinha

The country's present day fish production is of the order of about 2 million metric tonnes, of which 1·2 million metric tonnes is obtained from marine resources and 0·8 million metric tonnes from inland waters with only about 0·4 million metric tonnes being contributed by aquaculture. The present *per capita* consumption of fish in the country is only 2·8 lg. compared to the requirement of 31 lg., as recommended by the Nutrition Advisory Committee on Human Nutrition. However, even to maintain this rate of consumption, the quantity of fish required by the country in 1985 will be to the order of 2·3 million metric tonnes.

In order to narrow down the gap between fish production and requirement, several measures have to be taken in both marine and inland sectors. Capture fisheries by themselves can not offer an inexhaustible resource to meet the ever increasing demand, particularly, when conservation and management measures have to be adopted in the interest of optimum utilisation of the resource on a continuing basis. In this context, aquaculture offers a promising approach to effectively supplement the requirements of fish for the people. The comparatively low capital investment, the intensive nature of culture operations and the fact that it could be developed as a cottage industry, point to its adventages particularly for wide-scale adoption.

Our country offers a rich potential for development of aquaculture with about 1·6 million ha of fresh water ponds and tanks, of which 0·6 ha are currently utilised, 0·4 million ha of are readily available for utilisation and 0·6 million ha are swampy areas needing reclamation for aquaculture.

Despite the long history in India, fish culture has not yet attained the status of an industrial enterprise from a subsistence activity. This is partly because of the low yield being obtained (600 lg/ha/yr) by traditional methods and partly because the fish culturists lack financial resources and knowledge of modern scientific methods of fish culture. Against this background in recent years, Cuttack Station of the Central Inland Fisheries Research Institute has taken a great leap forward by evolving polyculture technique known as composits fish culture, by which productions of 3—9 metric tons/ha/year have been achieved in manageable freshwater impoundments. The principle underlying composite fish culture is the utilisation and exploitation of all the available ecological niches by culturing together compatible carp species of different feeding habits in proper stocking rates and ratios. Based on this principle, six species of carps are cultured together in freshwater ponds (Fig. 1)

Fig. 1 Composite fish culture having three tier system of carp culture.

These are three Indian major carps-catle, *Catla catla*—a surface zooplsnkton feeder; rohu, *Labao rohita*—a column feeder subsisting on decaying vegetation and mrigal, Cirrhinus mrigals—bottom dweller utilising semi-rotten and decayed vegetation and detritus; and three oxotic carps, silver carp, *Hypophthelmichthys molitrix*—a surface phytoplankton feeder; grass carp, *Ctenopharvnopdon idella*—a macrovegetation feeder and common carp, *Cyprinus carpic* on omnivore, feeding on a variety of food items both of animal and plant orgin at the bottom and margins of the pond. In addition, at times, a few specimens of species such as chital—*Notopterus Chitals* and catfishes like pabde, *Ompok bimaculatus*, tengen, Mystus spp. and panges, *Pangasius pancasius*, are also added so as to utilise still unexploited niches and help crops grow faster in the pond.

The technique of composite fish culture involves adoption of numerous preparatory steps such as eradication of aquatic weeds and predatory fishes; fertilisation of ponds, depending on the nutrient status of soil and water; stocking of ponds in appropriate density and ratio with different carp species depending on the natural food present and then to feed the growing fish with supplementary diet and finally harvesting of the fishes at a suitable time, depending on the growth performance of each species.

An All-India Co-ordinated Research Project on "Composite Culture of Indian and Exotic Fishes" has been initiated since 1972 by the Indian Council of Agricultural Research under the Central Inland Fisheries Reasearch Institute, Barrackpore, in six States, viz., Andhra Pradesh, Haryana, Maharashtra, Tamil Nandu, Uttar Pradesh and West Bengal, representing different agro-climatic conditions. The advent of this Co-ordinated Research Project proved to be the turning point in the annals of fish culture in India. Within 4 years of initiation of the project, almost all the centres have shown remarkable progress, not only towards the augmentation of per hectare production of fish in pond culture operations but also in extending the technique of seed production of Indian and exotic fishes, for example, at Karnal sub-centre in Haryana, a net productions as high as 5,585 kg/ha/6 months and 7,284 kg/ha/8 months were recorded and at Poona sub-centre in Maharashtra 5,172 kg/ha/6½ months. Sustained net productions ranging from 5,737—6,638 kg/ha/yr were achieved at Kalyani sub-centres. The net productions of the order of 3,087 kg/ha/6 months and 7,748 kg/ha/1½ years were recorded at Gujaratal sub-centre in Uttar Pradesh. At the newly started sub-centre in Assam with acidic soil, productions to the tune of 3,534—3,896 kg/

ha/yr were obtained. At the other centres, such as Bhavanisagar in Tamil Nadu and Badampudi in Andhra Pradesh too, the fish yield was quite high (Fig.2).

Fig. 2—Fish production at Cuttack Sub-station and different sub-centres of the Co-ordinated project on Composite Fish Culture.

These experiments have also indicated the possibility of raising two crops a year and utilisation of seasonal ponds which retain water for only 6—8 months for raising table-sized fish. When composite fish culture was undertaken in larger sheets of water of 1·4 ha to 2·3 ha, an average production to the tune of 3,637 kg/ha/yr has been obtained. A large volume of surplus water is available in the command area during Kharif season which often goes waste. Composite fish culture can be organised in these places in such a way that fish are harvested before April.

Fishes harvested from composite fish culture ponds are not only of table size, but also form excellent brood fish. To demonstrate this, breeding of these fishes was undertaken at different centres of the project with significant results. It is interesting to note that grass carp and silver carp have been breed for the first time in many States. It is hoped that within a short time healthy brood fish will be available in considerable quantities in different States for fish seed production. This will solve the problem of scarcity of brood stock of these carps to a great extent which will go a long way to popularise induced breeding techniques to help meet the shortage of fish seed. In fact, one of the objectives of composite fish culture ought to be the production of brood fish for fish seed production along with production of fish for the table.

Composite fish culture is not only a high yielding tecnology but, at the same time, it is highly ecnomically viable. The cost of production on inputs, such as mahua oilcake (piscicide), feed, fertilizers and fingerlings has been shown to range between Rs. 0·65—2·00 at different centres of the Co-ordinated Project. A simple comparison of cost of production, expenditure and profit from traditional fish culture *versus* composite fish culture given below indicates the income potential of the latter.

One hectare area for one year

	Traditional culture	Composite fish culture
	Rs,	Rs.
Pond rent	500·00	500·00
Developmental costs and other implements.	..	400
Piscicides	..	450·00
Fingerlings	500·00	500·00
Fertilizers	..	1,000·00
Feed	..	4,500·00
Labour	1,445·00	4,080·00
Total	2,445·00	11,430·00
Production	600 kg.	3,000 kg.
Total income of fish @Rs. 7 pe kg.	Rs. 4.200·00	Rs. 21,000·00
Net profit	Rs. 1,755·00	Rs. 9,570·00

The difference in net profit between the two systems of culture is vary significant and this ought to encourage fish farmers to take up to composite fish culture. The magnitude of production, water resources available in India, the present day market price of fish and the low cost of production should create most favourable circumstances for rapid development of composite fish culture throughout India.

A noteworthy feature in developing scientific method of composite fish culture is that it creates on the one hand a new class of entrepreneureal occupation, viz., fish farmers altogether different from the occupational fishermen, two are almost entirely engaged in fish catching only, and, on the other hand, an unskilled labour-intensive programme which can be developed on the basis of regional self-sufficiency.

The employment potential of composite fish culture, if adopted in only 0·6 million hectars of presently cultured water, has been estimated to be as shown in the table below.

Items	Employment potential		
	Man-days in million	In million initially	Persons annually
(1)	(2)	(3)	(4)
For capital items ..	157·50 initial per year	0·43	..
For recurring input items ..	192·00 initial per year	..	0·53
For maintenance, replacement of capital item.	15·75 initial per year	..	0·04
For fish culture (Regular) ..	438·00 initiat per year	..	1·20
For fish culture (Casual) ..	135·00 initial per year	..	0·36
For marketing ..	47·82 initial per year	..	0·13
Total ..	686·07 million man-days	0·43	2·26

The main constraint so far in the development of aquaculture as an industry is the lack of financial resources of the existing and potential fish farmers and also lack of knowledge of modern scientific technology of fish culture. To this end the Central Inland Fisheries Research Institute is organising training programmes for the benefit of fish farmers, officials of the State Governments and of the commercial banks so as to acquaint them with the economic viability of the technology and the financial needs of the farmers. The opening of this Freshwater Aquaculture Research and Training Centre at Dhauli and Krishi Vigyan Kendra and Trainers' Training Centre by the ICAR exclusively for fisheries there will go a long way to achieve these goals. On the other hand, the Government of India has set up a number of Fish Farmers' Development Agencies all over the country to link up Institutional finance with rural aquaculture.

Considering the high yield production potential of composite fish culture, it is recognised by knowledgeable, discerning and dynamic men of vision in India and abroad that the technology of composite fish culture has been developed to a stage when its adoption has to be done in a concrete manner by the States to raise inland aquaculture from the subsistence level to an established industry. The Planning Commission has advised all the State Governments to draw up programmes for implementation of composite fish culture in their respective States. The Government of West Bengal has already taken up composite fish culture in 100 demonstration farms and the Government of Bihar has drawn up a programme for taking up the same on an extensive scale.

The Ministry of Food and Agriculture has asked the States of Uttar Pradesh, Assam, Madhya Pradesh and Rajasthan to draw up similar programmes. Thus, it indicates that if these programmes are effectively implemented with the scientific support already available, composite fish culture can boost up the freshwater fish production to a considerable extent, reduce the shortfall in fish seed requirement and, at the same time create enormous job opportunities to our rural poor and thus can fulfil our national policy on inland fisheries development which centres around the concept of giving a better deal to socially backward communities, more and better employment opportunities and evolution of short and long term programmes to raise fish production.

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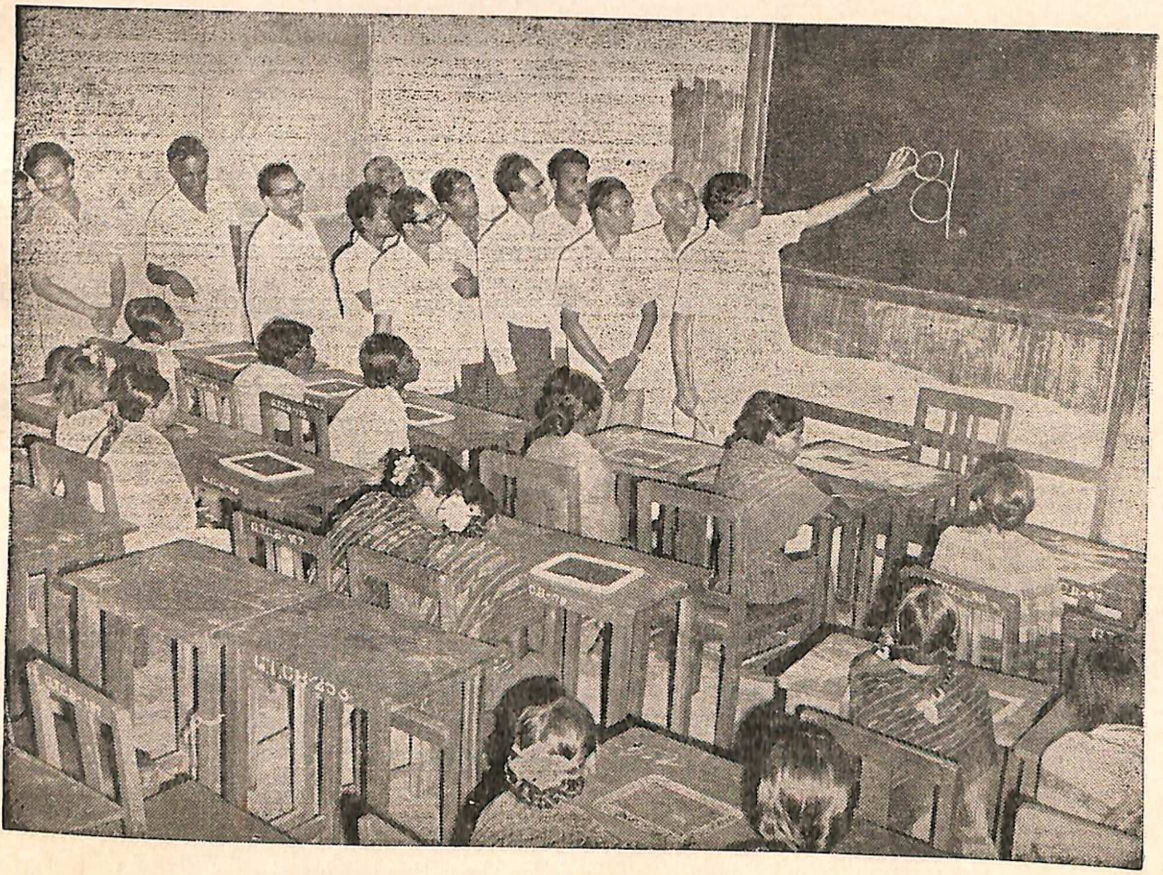
Officer-in-charge,
Freshwater Agriculture Research and
Training Centre, Dhauli, Bhubaneswar.



MINERAL DEVELOPMENT IN ORISSA—A PROFILE

RESERVES

	(In million tonnes)
Iron Ore	3,300
Manganese Ore	43
Chromite	19
Nickel Ore (+0·8%Ni)	65
Vanadium Ore (+1%V_2O_5)	2
Copper Ore (1·5%Cu)	1·6
Lead Ore (5% Lead)	5·6
Bauxite	Over 700
Coal	Over 10,000
Limestone	700
Dolomite	360
Fireclay	62
Chinaclay	Over 7
Quartzite	Over 15

—also Graphite, Kyanite, Andalusite, Ilmenite. Sillimanite and Monazite bearing Sands, Asbestos, Mica, Beryl, Soapstone, Felspar, etc. in abundance.

—and now indications of Tin and Gold.

Orissa possesses the country's only known commercially workable deposit of Nickel Ore, 90% of total reserves of Chromite and the largest reserves of Bauxite in the country.

PRODUCTION

Orissa produced 11·7 million tonnes of ores and minerals during 1966, which practically remained stagnant till the end of 1974.

Implementation of 20-Point Economic Programme resulted in mineral production exceeding 14 million tonnes in 1975.

EXPORT

Export was a mere 1·2 million tonnes in 1966. It totalled 2·7 million tonnes of Iron, Manganese and Chrome Ores during 1975.

REVENUE

Mining revenue has shot up from Rs. 172 lakhs during 1965-66 to more than Rs. 450 lakhs now.

EMPLOYMENT

The Mining Industry now provides direct employment to over 60,000 persons, as against 50,000, a decade ago. A Mine worker today gets the minimum wage prescribed by Government and this is being strictly enforced.

ORISSA MINING CORPORATION

A pioneer undertaking in the Public Sector, wholly owned by the State Government, O. M. C. has made rapid strides during the last 10 years.

Its production of Iron, Manganese and Chrome ores increased from 3·5 to over 17 lakhs tonnes.

Financial turnover during 1975-76 reached a record of Rs. 18 crores as against Rs. 25 lakhs during 1965-66. O.M.C. Ltd. earned Rs. 16·50 crores in Foreign exchange for the country in 1975-76.

The Corporation now provides employment to over 12,000 persons as against only 1,300 during 1966.

Its contribution to the State exchequer now exceeds Rs. 2 crores. A decade ago, it was Rs. 5 lakhs.

The O. M. C. has drawn up ambitious plans to take up mining of Manganese Ore, graphite Clay. Vanadium Ore and Bauxite on a large scale besides expanding activities in the field of iron and chrome ores.

MINERAL BASED INDUSTRIES

The Industrial scene in Orissa is dominated by—

Iron and Steel Plant at Rourkela

Two Ferro-manganese Plants

One Low Shaft Pig-iron Plant

A Ferro Chrome Plant

A Ferro Silicon Plant

Two Cement Plants

Four Refractory Plants

One Glass Factory

A Thermal Power Plant

Graphite Beneficiation and Crucible Plants

A Coal based Fertiliser Plant is nearing completion at Talcher.

Preliminary work is in progress for setting up of

A Nickel Plant

A Lead Concentration Plant

A Ferro Vanadium Plant

Refractory Plant

Heavy Minerals Separation Plant

Sodium Dichromate Plant

Electrolytic Manganese Dioxide Plant

Basing on the extensive reserves of Bauxite and steel making raw materials a large size Alumina-Aluminum Complex and an integrated Iron and Steel Plant have been proposed.

POTENTIAL FOR DEVELOPMENT

The need for expeditious development of mineral resources is now fully realised.

⁂

A 10-Year Master Plan has been drawn up for mineral exploration. Export potential of ores and minerals and infrastructure facilities needed have been assessed.

⁂

There is indeed tremendous potential for export of minerals and ores both in raw and processed form.

⁂

With a deep water port at Paradip, abundant water and power potential and extensive untapped reserves of minerals and ores, Orissa is poised to make a signifacant impact on the economic growth of the country

⁂

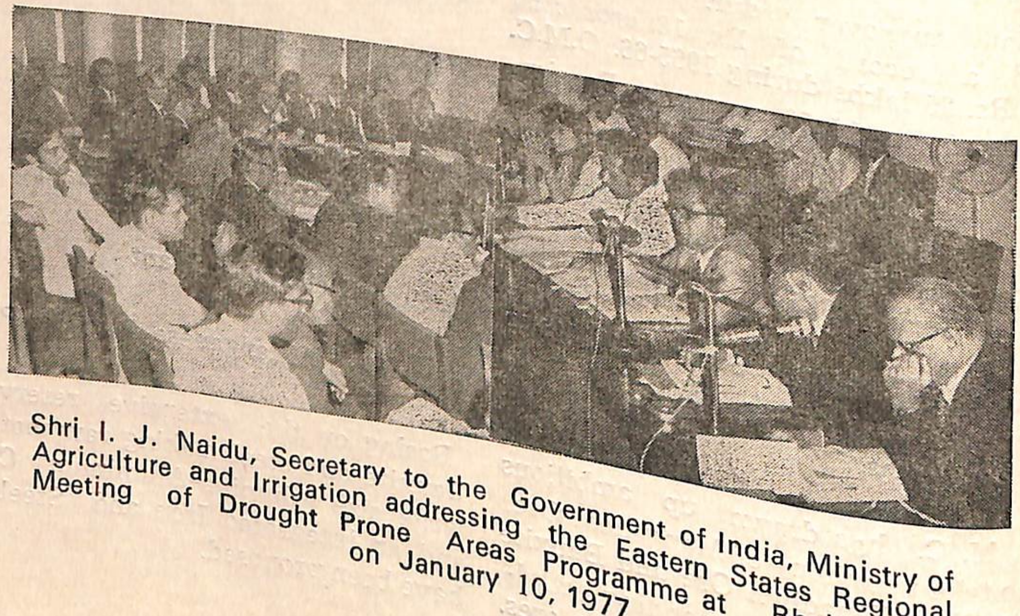
Ambitious though, it would be reasonable to expect an annual mineral production of 25 million tonnes 10 Years hence and direct employment for over one lakh persons.

⁂

—And we are striving to achieve these

⁂

Courtsey :
Shri B. K. Mohanty
Director of Mines Orissa



Shri I. J. Naidu, Secretary to the Government of India, Ministry of Agriculture and Irrigation addressing the Eastern States Regional Meeting of Drought Prone Areas Programme at Bhubaneswar on January 10, 1977

AGRICULTURAL DEVELOPMENT AREA PROGRAMME FOR TRIBALS

Shri S. Mohapatra

The tribal sub-plan area comrises 15,543 villages in eight districts, viz., Mayurbhanj, Balasore, Sundargarh, Keonjhar, Phulbani, Ganjam, Kalahandi, Sambalpur and Koraput. The tribals live in small villages and hamlets having total population of 200 to 500 or even less. In the villages, the household live wide apart spread over a number of hamlets rending contacts by extension workers very difficult. The literacy percentage is very low. Hardly any adult of a village can read or write even his name.

The sub-plan area is covered, by forest to the extent of 32 per cent of the geographical area. The cultivated area is 2·7 million hectares. The size of operational holding is roughly 2 hectares per cultivating family and the average size of the family is 4 to 5 members.

The farming is chiefly dependent on rainfall. The main annual rainfall is 1558 mm. and is appears to be good for sustaining a crop of 100 days duration. But its distribution seriously vitiates expectation leading to large scale failure of crops. The bulk of the annual rainfall is from South-West monsoon and about 77 per cent of it is received during June to September. With the indiscriminate destruction of natural vegetation cover, the agro-ecosystem of the area has been vitiated. The experience shows that distribution of rainfall does not follow a definite trend for the guidance of the farmer.

The heavy down pour within a short-period, causes large scale soil erosion and gully formation. The productive top soil is washed away thereby rapidly depleting soil productivity. In many places the soil depth is reduced so much to expose the parent rock materials. The soils are mostly laterite, texturally poor with low water rententive and base exchanges capacity. The fertility status is very poor, except in sporadic places where there is heavy deposit of forest litters. In these degraded soils even a short duration dry spell seriously affect the crop growth of particularly grain crops of ten leading to large scale failures.

The tribals have developed their age long traditional agriculture in the absence of an adequate weather monitoring system and grow crops which give unsatisfactory returns. The system of farming is of subsistence type which has adversely affected the economy of the tribals particularly in view of low level of technological development.

Getting agriculture moving in the tribal areas is a complex task. It is a perplexing task as well. It is complex because so many different conditions have to be created or modified by various persons or a group of people. It is perplex because the sprit of the people (tribal) is involved also.

In this paper the agricultural development in the tribal areas is dealt in two parts. The first part relates to Technology and the second part deals with the Infrastructure to provide facilities to carry through the message and translate it into action.

1. Technology

1·1. The tribal agriculture is still in the primature stage. "Podu" cultivotion is still in practice on hill slopes in rotation till the parent rock is exposed and no plant can grow. Paddy, minor millets, local Maize, Jowar, Arhar, Mung, Biri, Kulthi, Niger, Mustard, Turmeric are generally grown exploiting the virgin fertility of newly reclaimed areas. It is mostly monocultured. The double cropped areas are localised and confined to only few patches having irrigation facilities. The scope of exploiting residual soil moisture is limited to only low-lying fallow lands which is insignificantly small. In some of the hilly areas horticultural plantation consisting of mango, orange, lemon, Jackfruit, guava, custard apple, pineapple, banana are largely grown in the traditional methods.

The use of improved varieties of seed, chemical fertiliser, pesticides and improved agricultural implements are negligible. To many tribals these are unknown.

1·2. The technological development are twofold :—(a) technology for adoption of suitable cropping patterns in different types of land depending on capability of production and (b) technology for management of soil to sustain production.

1·3. The judicious utilisation of land includes adoption of suitable cropping patterns in different types of land. The land in the sub-plan areas may be broadly classified as (a) hill slopes which was formerly used for 'Podu' cultivation, (b) fort hills (c) 'Taila land' or unbunded high land, (d) medium land in the terrace and (e) valley or jhola land. Suggested crops for different types land are—

(*a*) Hill elopes—Suitable for growing horticultural crops like, Mango, Jack-fruits etc.

(*b*) Foot hills—Horticultural plantation, which may include, Pineaples, Cashewnut and different grasses and other restoration crops.

(*c*) Taila land or unbunded high land. (*a*) Arhar, Cotto, Castor

(*b*) Strip cropping with Jowar, Maize, Bajra, other minor millets, Mung, Biri. Sesamum, Groundnut etc.

(*d*) Terraced medium land—Ragi, Maixe, Nigerm, Jowar, short duration paddy, Mustard etc.

(*e*) Valle land or Jhola land—Paddy

1·4. The judicious management practices for land includes.

(a) Gully plugging

(b) Terracing

(c) Contour bunding

(d) Strip cropping

(e) Suitable crop rotation including leguminous crop.

(f) Judicious application of forest litter/compost/F. Y. M.

(g) Green manuring

(h) Sub-soiling of land

2. Infrastructures

Suitable infractructures should be developed to carry the techical know-how to the farmer, educate and motivate them and put into action on one hand on the other hand provide package of services to get the required inputs in time, properly utilise them for production and market the produce.

2·1. Effective Extension Organisation :—

An effective extension organisation having single line of control is a primary need in getting agriculture moving in the tribal, sub-plan areas. The extension staff should use appropriate methods and techniques to infuse change in farmers and the tribal community. The extension programme of the past designed to achieve national and State goals or targets, needs to give way to a new orientation that deals area-wise with farm and village problems as they exist. This in turn will lead to achievement of national and State agricultural development goals.

The extension worker, to be effective, must be adviser, teacher, demonstrator, analyzer, mobilizer and organizer. He must work in the context of the culture of the village, be accepted by the village and be familiar with farmers needs. He must be technically equipped, know local language and a dedicated worker. The extension work should seek to achieve impact through development of both individual and group action.

In an underveloped area like that of tribal sub-plan, one village level worker should have responsibility to look after 200 to 300 farm families.

2·2. Training Support :—

There is need for constant in-service training of the field workers. They should be equipped with emerging technology and new innovations to be acceptable to the farmers. The farmer in turn are to be provided with such new methods and practices which are dependable and profitable. To accomplish these services of subject matter specialists of different disciplines should be available at the project level.

2·3. Agricultural Information Support :—

There should be provision for a Agricultural Information Service Unit at the Project headquarters level. They should be responsible for disseminating the technical know-how in an understandable from using different communicating media. This supporting unit will also be responsible to create individual and group participation and conduct field days and field trips to different places. This unit should have facilities for taking photographs for preparing teaching materials. Further there should be provision for adult literacy. They should be taught the methods of saving of money and should bring changes in the traditional belief of the community and help to move towards modernization.

2·4. Adaptive Trials and Demonstration:—

Adaptive research may be defined as research in which known basic principles or general practices are adopted to a specific local area or situation. Adaptive trials should be conducted on problems which farmer encounters on his farm. The finding of such trials will provide the basis for local decision in production operations. The adaptive trials and composite demonstrations on different crops may be conducted in the farmer's field. The results should be utilised for educating farmers.

This is another supporting unit which the project should have. The function of this unit is to conduct survey of the area, collect soil samples and get them analysed from the existing regional soil testing laboratory and prepare soil fertility map of different localities. The unit should find out from reconnaissance survey the land capabilities classes, different soil conservation measures to be taken and prepare map of the locality accordingly. Such survey and maping will help to find out, type of crops to be grown, different soil conservation measures to be taken, soil conditions or amendments to be used and package of practices for various crops to be adopted in different type of lands.

2.6. Development Local Leadership :—

The Panchayatiraj approach seeks to find a means of involvement of local leadership in agricultural development. But till now it has not been recognised that such leadership must be trained to be functional. To accomplish people's involvement and participation in agricultural development of tribal areas, there is urgent need to develop functional local leadership. In each village a group of local leaders should be selected. They should be trained continuously by the extension workers to make them functional leaders of the village. Those local leaders should be the 'Contact Farmers'. The village level worker will approach him very often with new technology and innovations which are dependable and acceptable to the farmers. The V. L. W. should work through these functional leaders of the village.

2. 7. Agro-Service Centres :—

A net work of 'Agro-service Centre' should be organised at the village level.

Depending on area and farm families, the area of operation of each centre should be confined to a group of villages or hamlets. Such Agro-service centre should be managed by co-operative sector or it should be privately managed with financial assistance of Government. Such centres should be under the charge of technical personnel and should be provided with trained squads. The function of the such centres should be two fold, (a) supply of inputs (b) custom services. The inputs may include (i) improved seeds and planting materials (ii) chemical fertilisers including soil conditions and soil amendments, (iii) Pesticides (iv) farm tools and implements (v) sprayers and dusters for plant protection. The services may include (a) repair of farm implements, sprayers and dusters (b) collection of soil samples and provide recommendation (c) custon service for land development including layout and reclamation (d) Custom service for undertaking plant protection etc.

2.8. Credit Institution :—

Provision of farm credit is very important in accelerating agricultural development and it is more so in case of sub-plan areas with poor economy and imperfect title to property and land. The tribals are below the starvation level and there may need in the initial stage for provision of consumption credit. The credit may be given by the co-operative society or by rural banks. The procedure should be very much simplified and arrangement made for easy and quick supply of credit. Each farmer should have a 'Input Card' indicating the requirement of different inputs and cost of inputs. The agro service centre may supply the required inputs as per input card and cost may be reimbursed by the credit institutions. There should be medium term loan for purchase of bullocks, implements, tools and sprayers and land development.

2.9. Marketing Organisation :—

There is need for organisation of strong marketing institution at village level. The chief object should be to save tribals from exploitation of middle man. This organisation should have responsibilities in educating the tribals on weights and meaures and different functions of marketing.

This organisation should also have provision for linking credit with marketing. The farm produce of the tribal should be pledged with the marketing institution. The farmer should get immediately 75 per cent of the value based on the prevailing market price and the balance 25 per cent may be given at later dates when the produces are marketed. Out of 75 per cent value given to the farmer, a part may be paid back to credit institution towards recovery of loan and the balance may be given to the farmer for his family consumption. The 25 per cent of the value which is to be given after actual sale of the produce should be deposited in saving bank pass book opened in favour of each member farmer.

2.10. Agricultural Engineering Service Unit :—

This is another supporting unit to be located at the project level with trained field staff. The main function of this unit is to organise demonstration on improved farm tools and implements, train village artisans on repair and maintenance. Secondly, this unit should survey and prepare plan and estimates for reclamation, lay-out and land levelling. Thirdly it should be responsible for helping farmer in constructing farm houses like cattle shed, poultry shed, including low cost dwelling houses. Fourthly, this unit should help in preparing plan and estimates for the dugwell water harvesting structures, diversion weirs and help in constructing such structures.

2.11. Animal husbandry service Unit :—

The function of this unit would be for (a) upgrading of cattle through artificial insemination (b) training the farmers on keeping of birds, goats, pigs and upkeeping of cattle (c) organising marketing of the produce (d) fodder and pasture development and helping farmers in purchasing their domestic animals. This unit should be located at Project level with necessary field staff.

2.12. Horticultural Plantation Unit :—

This unit with its necessary trained personnel should be located at the project Headquarters. There should be transit nursery for keeping planting materials. The main function of this unit will be to organise plantation of horticultural crops in hills and hill slopes, and helping farmers in kitchen gardening in their back yards. They should have responsibility of supplying planting materials of fruits and vegetables and processing and marketing of fruits and vegetables.

They should also be responsible to train the farmers and give in-service training to V. L. Ws. in respect to husbandry of horticultural crops.

3. Strategy for Development

Despite extension efforts over past two decades and more, the agricultural development in the tribal areas has not progressed to any desired level. The agricultural practices are still in the primitive stage. Although the required technology for agricultural development is available, it has not gained ground in the tribal areas and there has not been any spectucular improvement in the sub-plan areas. This is possible only when appropriate break-through technology adapted to the agro-eco-system is made available. In addition, deterrants to adoption of dependable and profitable technology must be indentified and appropriate measures taken to provide necessary support and services that will permit and encourage such adoption. Thus the agricultural development in tribal areas with the existance of primitive agricultural practices can be thought of in three stages, with shortrun and long range objectives. The short-run objectives would be to increase acre yield through use of appropriate technology and the long run objectives would to improve the standard of living and bring about a social change in the tribal community. The Agricultural Improvement Project should have a phased programme of development for atleast ten years with first, second and third stages of development.

Stage—I. In this stage, area-wise demonstration should be organised for an integrated agricultural development adopting recommended cropping patterns and dependable technology. The suggested land improvement measures and crop husbandry should be undertaken in a group of farmers' field. The required funds will be provided from tribal sub-plan budget for purchage of necessary inputs and the labour required for cultivation will be provided by the tribal beneficiaries. The tribal farmer should be given wages at a concessional rate. This is a sort of 'food for work'. At the end of the season, the farm produces should be marketed. If technology is followed properly, the annual crop is expected to give a return Rs. 1·50 for every rupee spent. Out of Rs. 1·50, Re. 1·00 may be distributed among beneficiaries as bonus which should be deposited in their saving account pass books and Re. 0·50 may be deposited in the Project account which will be utilised for organising further such Area Programme. As per example if Rs. 100 is spent in growing crops adopting improved package of practices, will give a gross income of Rs. 250. Out of Rs. 250, Rs. 100 goes towards paying back the operating capital leaving a margin of Rs. 150. Out of Rs. 150 sum of Rs. 100 goes towards bonus distribution and Rs. 50 is credited to project account. Depending on local situations, this stage should continue for three successful years. In a phased manner, the demonstration area may then be shifted to another area in the locality. This is a stage of demonstration where where the farmer wil lbe trained on the principle "Learning by doing".

Stage II—In this stage the farmer will be helped to operate his own farm. He will be provided with necessary farm credit for purchase of inputs. The credit will be supplied as per estimates of the 'Input Card". The credit will be linked with marketing. The farmer will be required to pledge his farm produce with the marketing institutions. He will be paid at the first instance 75 per cent of the value of the produce as per prevailing market price, and the balance 25 per cent will be given to him after the actual sale of the produce. Out of 75 per cent value, a part will go to repay the principal and interest of shortern loan and balance will go towards his family consumption. Out of 25 per cent value of produce given to the farmer should be deposited in his saving bank account. The payment of instalments of medium term loan should be paid from the savings. In this stage the farmer will be provided technical know-how for operating his farm, but the farmer will be the decision maker. He will be persuaded to adopt one of crop-model recommended for different types of land of the locality. The project will provide subsidy on transportation of inputs. The object of giving subsidy is to reduce the high cost of certified seeds. chemical fertiliser, pesticides and the improved tools and implements including plant protection equipment. This subsidy should be given to the supply agencies but not to the farmer.

Depending on successfulness of the farmer, the second stage of development may continue for three years. This stage of development may be difined as a stage "helping farmers to help themselves" in operating their own farms.

Stage III—This is the stage of self-sufficiency. In this stage, the scientific break-through should be converted into production, break-through. The improved management practices should be meticulously followed by the farmers. The farmers should be trained to adopt new technology and innovations. The subsidy of seeds, fertiliser, pesticides should be gradually reduced but the subsidy to the extent of 25 per cent on farm implements, machinery including plant protection equipment should continue during this period. Equal emphasis should be laid on crop husbandry and soil management to sustain productivity. During the period ancillary agro-based small indutries should also be developed in the sub-plan areas.

These stages of devlopment should be continuous and different areas of the project should be brought under three stages in a phased manner.

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Assistant Director, Agriculture Orissa.
Bhubaneswar.

Shri A. P. Shinde, Union Minister of State for Agriculture addressing the delegates on the occasion of the 30th Annual Conference of the Indian Society of Agricultural Statistics a Soochana Bhawan, Bhubaneswar on December 30, 1976

FAMILY PLANNING IN ORISSA

Dr. S. K. Mitra

The State has an estimated population of 23,763,000 in 1975 (21·09 million as per 1971 Census) with a density of 141 persons per square kilomiter relatively thinly populated. 92 per cent of the population live in rural areas scattered in 51,639 villages. Hardly 4,400 number of villages have a population of more than 1,000 and most of them have a population of 250 or less particularly in hinter land. The tribal population accounts for 24 per cent of the State and majority of villages are located in hilly areas with less than 100 population. 67 per cent of the State is hilly and difficult areas continuous with Eastern Ghats, Vindhya ranges and Chotanagpur platue. These areas are hilly, malarious and have been declared problem areas after 15 years of N.M.E.P. operations by an Expert Committee of WHO. Literacy rate of the State is 26·18 per cent only and average income level is Rs. 463 *per capita.*

The above will indicate the amount of dilution of health measures and difficulties of communication and other hazards which dilute the efforts and services of Health Department particularly since all the preventive health measures are now domicilliary in nature and people are being offered the services at their home or near their homes. Inspite of above, the growth rate of population in the State is one of the highest as will appear from comparison of decadal variation given below:—

POPULATION

Census	Decadal variation India	Decadal variation Orissa
1931	11·0	+11·94
1941	14·23	+10·22
1951	13·31	+ 6·38
1961	21·64	+19·82
1971	24·80	+25·05

The increase in growth rate is mainly due to successful control of epidemic diseases like Malaria, Smallpox, Cholera, etc., which started with N.M.E.P. operations introduced from 1953, primary health centre concept and steps against Malaria and cholera from first plan period which accounts for sudden rise in the growth rate due to reduced death rate.

The high growth rate was a natural sequence and Family Planning as a health measure was introduced from 1956. The extent of increase in population can be well imagined from the fact that we are adding to the country above 12 million population every year—equal to entire population of Australia and from independence onwards we have added 282 million population equal to the population of USSR.

Family Planning to be adopted as norm require a lot of extension work and a change over from 1963-64 laying emphasis on rural bias was introduced with a firm intrastructure to reach people in the 51,000 and odd villages in the State. Subsequently it was realsed that MCH component, immunisation programme for children and mothers, nutritional improvement for deficiency diseases like anaemia, vit. A deficiency all these four components are very much necessary for welfare of the family. There have been added to give comprehensive service besides Family Planning. The need for treatment at the village level was also appreciated and treatment of minor ailments at subcentre level has been introduced from 1974-75. The latest trend is to have a 3-tier system at community level, at subcentre level, at P. H. C. level in every Block. Referal system is being intensified by having one upgraded P. H. C. with reasonable facilities of X-Ray, transport, Ambulance service to the Subdivisional Hospitals, District Hospitals and the Medical College Hospitals in that order.

There is already a sub-centre with an A. N. M. for every 8,000 population. This will be re-inforced by a multipurpose male worker for every 10,000 population with suitable Supervisory Paramedical staff at the rate of 1:4 workers headed by 2 Doctors for each Primary Health Centre.

The methods available for Family Planning, include earlier rhythem method (which has been discarded), conventional contraceptives Nirodh for male population. Diaphragm, Jelly, Foam Tablets and IUD (Loop & Cu. T) for married women restricted use of Oral pills by women who want to space their pregnancy and terminal methods for couple who have already raised a family of 2 children or more. At the moment efforts are being made to prepare a long acting vaccine.

In short a cafetoria approach is available—Nirodh, Diaphragm, Foam tablets for newly married and those who have had their last child recently. Oral pills also will be a good substitute provided it is taken regularly and supplies are adequately available.

For spacing pregnancy IUD-Loop or copper T is most suitable and finally after 2 children Vasectomy for male or Tubectomy for female is always advisable.

Provision exists for contingencies like loss of children after vasectomy or Tubectomy. The re-canalisation operation to reverse the sterilisation operation and enable a person to have further pregnancy is being arranged in all the Medical College Hospitals.

For failure of Family Planning measures, and also for other health reasons Abortion Laws have been liberalised. The Medical Termination of Pregnancy Act of 1971 latter modified in 1975 and its rules provide for Medical termination of pregnancy possible for a lady whatever her status—married or unmarried or widow-to terminate her pregnancy before 20 weeks. Taking into consideration the huge number of clandestine abortions reasulting in death and other complication, facilities for M.T.P. has been made in all Medical Colleges and District Hospitals and is now being extended to the level of Subdivisional Hospitals and Primary Health Centres.

It has been appreciated that the best way to motivate a couple to adopt Family Planning as a norm, is to motivate pregnant mothers or potential mothers i.e. newly married. A common question disturbs a mother " will my children live as expected ? will they be casualities before they reach their adult age" ? Child morbidity of mortality are mainly due to Mal-nutrition and preventable communicable diseases. Various feeding programmes have been introduced in the shape of applied Nutrition programme special Nutrition programme, CARE feeding programme and feeding programmes by various other agencies with emphasis on the children and expectant mothers. Anaemia and Vitamin-A deficiency have been pin pointed, for various Nutritional problem for the mother and children. Vitamin-A deficiency is responsible besides low resistance to diseases, Eye troubles leeding to blindness at young age. This can be prevented by proper use of Iron preparation with Follic Acid for anaemia and concentrated Vitamin-A for children.

Immunisation against preventable diseases like Diptheria, Hooping cough, etc., in young children of less that 5 years, Diptheria and Titanus in older children and Titanus of expectant mothers are being taken up by wide use of Toxoids like DPT., D.T. and T. T. For treatment of minor ailments each sub-centre

Dr. D. V. Ramana Rao, M. S., Dr. (Miss) B. Indira, M. B. B. S. and Dr. G. D. P. Patnayak, M. B. B. S., D. O. (OPH) conducting Tobectomy camp at Kumuli Dispensary on 31st May, 1976

A. N. M. is being provided with drugs worth Rs. 2,000. These are served at sub-centres and also in the village by the A. N. Ms. when she goes for attending to antinatal and postnatal mothers and village visits.

Each of the Vasectomy and Tubectomy cases after operation are followed by field staff at their homes and necessary drugs and injections are given at their homes, to prevent complications and infections. Any case which shows indication of becoming complicated are either removed to the Primary Health Centre after the P. H. C. Doctor sees the case at home, to give further treatment and if necessary the case is removed to the District and Subdivisional Hospitals.

AIMS AND OBJECTS

The death rates have gone down due to intensive health measures but the birth rates have remained high (above 40 per 1000). The birth rates have been brought down to 35 by beginning of fifth Plan. The objective at present is to bring it down to 30 by end of 5th Plan and 25 end of 6th Plan. It is apparent that though there has been immense economic growth since independence, it has been totally diluted due to high population growth, resulting in persistent misery and poverty. The other reasons attributed to poverty is low literacy rate, particularly among women. All economic developments are diluted by population growth. The Family Planning Programme is now a National Programme in which everybody is involved irrespective of departments and their jurisdiction although provision of technical services remain the sole responsibility of the Health Department.

With the above background the National Population Policy has been declared and adopted with stress on the following:—

1. Age of marriage for girls is increased to 18 and for male to 21.

2. Literacy drive among have to be increased.

3. It is a programme for all Departments of Government, quasi-Government and private to be involved.

4. Higher incentives and facilities are given to the couple having two living children, couple having 3 children and couples having 4 or more children at the following rates :

Statement showing the breakup of compensation money for Sterilization for different categories of acceptors.

	Category (With two or less living children) Vasectomy	Tubectomy	Category (With three living children) Vasectomy	Tubectomy	Category (With four or more living children) Vasectory	Tubectomy
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Acceptor ..	100	100	50	50	25	25
2. Drugs & Dressings	10	15	10	15	10	15
3. Diet * ..	5	20	5	20	5	20
4. Transport ..	5	5	5	5	5	5
Total ..	120	140	70	90	45	65

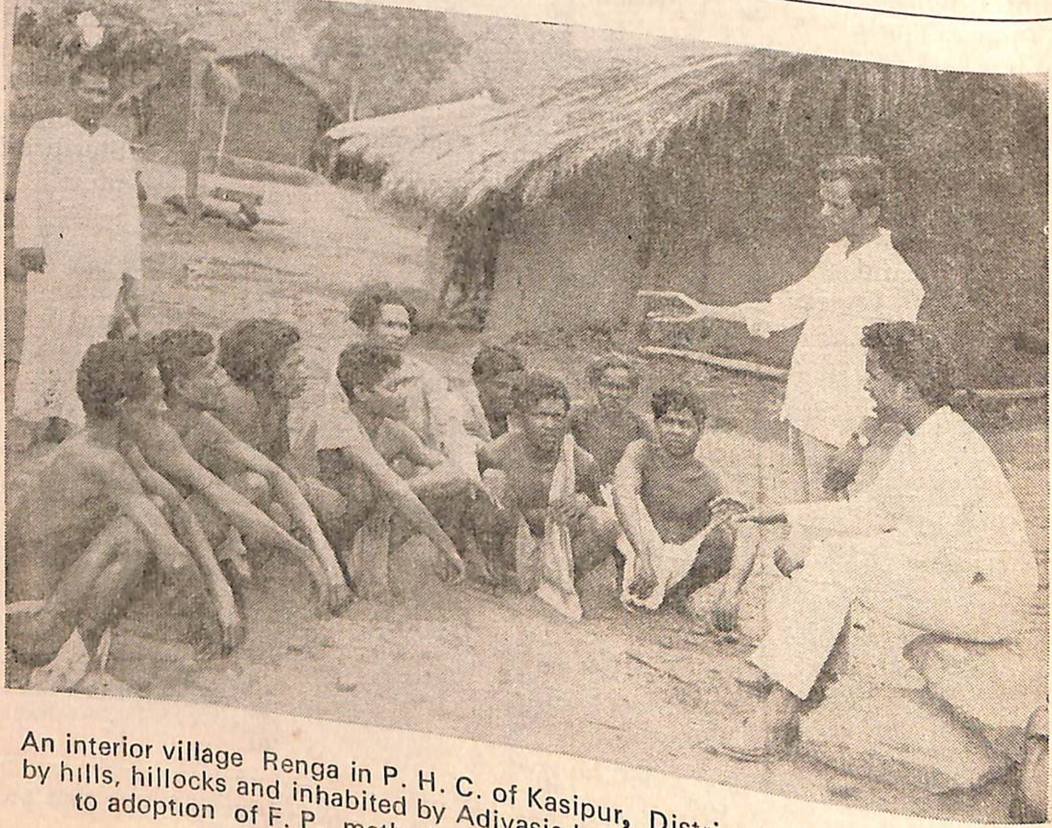
*If Hospital or P. H. C. supplies diet, no payment is made to beneficiary on that account.

The increased incentive for 2 and 3 children are particularly necessary since experience has shown that age-group of ladies amongst couples adopting sterilisation operation is usualy about 30. Analysis of 1974-75 sterilisation of Orissa show that by the age of 30 usually a couple have got more than 3 children.

Analysis of sterilisation operations in 1974-75 show that in cases of majority of couples, wife's age is above 30. The two tables below will bring out the above.

TABLE

Age group of Women (1)	Average No. of children (2)	No. of married couple (3)	Fertility rate (4)
15-19	1·3	23	140
20-24	2·1	35	283
25-29	3·5	36	283
30-34	4·8	31	247
35-39	5·8	26	181
40-44	6·4	21	98



An interior village Renga in P. H. C. of Kasipur, District Koraput surrounded by hills, hillocks and inhabited by Adivasis has shown the light of progress to adoption of F. P. methods (Sterilisation) by all eligible couples.

TABLE

Acceptance Patterns

Age group	Per cent
15-19	0·2
20-24	4·7
25-29	21·0
30-34	37·3
35-39	29·3
40-44	7·5

ACHIEVEMENTS

Various committees at State and district level with official and non-officials as also leaders of the community have been formed to guide the programme and solve its difficulties. Due care has been taken for publicity through TELEVISION, Radio, News papers besides other audio-visual methods and utilisation of local, folk, amusement programmes. The State has to its credit the Karve Award for 2 consecutive years 1969-70, 1970-71, for best performance in the country. The State has also got the distinction of winning many prizes and recognitions at all India level.

With the guidance and keen interest of our Health Minister of the State and keen interest shown by the Chief Minister we have surpassed our targets of sterilisation in 1975-76. Active participation of Collectors and District Family Planning Co-ordination Committee gave added impetus of dynamism to the programme. Against 1·09 lakhs, 1·24 lakhs of operation were done 55,851 were tubectomy operations out of 1·24 lakhs in the State. Tubectomy operation is a major operation which is now being done not only in Medical College Hospital level but even down below up to Sub-Centre level. Majority of operations are done at P. H. C. level by deputing operative squads from the district and Subdivisional level. Where as in 1974-75 we had done 69,000 sterilisations of which only 21,690 were cases of tubectomy in 1975-76, the trend for Tubectomy has surpassed all our previous estimates.

Our aim is to do steady progress rather than organising huge camps as was the practice in some of the States two or three years back and later abandoned and discouraged. The state has no intention of making sterilisation compulsory at the moment.

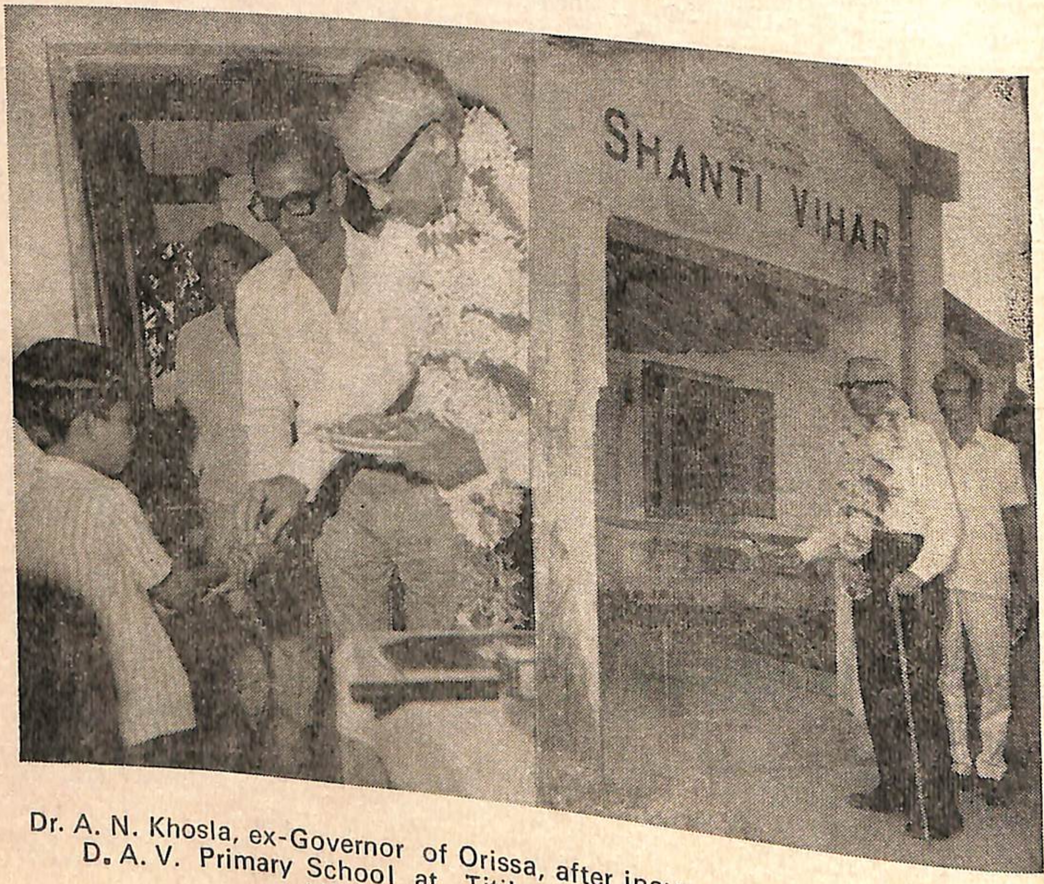
ACHIEVEMENT IN 1975-76 ARE TABULATED BELOW

Family Planning

Method	Target	Achievement	Per cent
Sterilisation ..	1,09,200	1,24,088	114
I. U. D. ..	32,300	23,843	74
C. C. Users ..	49,800	42,403	85
M. C. H.			
Titanus Immunisation for mother.	1,30,000	31,354	24
D. P. T. ..	1,75,000	42,552	24
D. T. Immunisation	2,00,000	33,084	17
Against nutritional Anaemia			
Mothers ..	1,00,000	1,42,418	142
Children ..	1,00,000	1,19,814	120
Vitamin 'A' ..	4,00,000	2,76,960	69

There are difficulties in implimenting a social welfare programme involving personal preferences particularly when literacy stands at a low level and sex is still a taboo. Added to this, inadequate communication facilities, religious superstitions and taboos act as challenges and call for extension services to reach every houshold. Nevertheless, the programme staff, in co-operation with voluntary agencies and the people have performed 9·4 lakhs sterilisations and 3·5 lakhs I.U.D. insertions since inception, accounting for a rate of acceptance of 38·89 sterilisation operation and 14·7 I.U.D. insertion in every 1,000 population. Our efforts in the coming years would continue for further improvements.

Director of Family Planning, Orissa



Dr. A. N. Khosla, ex-Governor of Orissa, after inaugurating the Gopabandhu D. A. V. Primary School at Titilagarh distributing Sweets among children on November 25, 1976.

NEW HORIZON OF NATIONAL CADET CORPS IN INDIA

Capt. A. C. Das

'National Cadet Corps' the largest youth organisation of India, have stepped into 29th year of it's glorious birth. During this period, this organisation have done tremendous progress and have achieved its aim in the field of imparting military training and utilising the growing youth of the country for the 'service to the Nation and employment.

During the "International Women's year", Air Wings and Naval Wings have been started in many Directorates of India to encourage the Senior girl cadets of the country Air Wing Girl Cadets, have been extended the facilities of Horse riding, wherever such facility exists. In the last All-India Girls Camp held at KHANDAGIRI hills during summer 1976 (May, June Bhubaneswar, Orissa), the girl-cadets have been imparted various adventure tranings, Judo fighting, and horse-riding etc. Glider trainings are also imparted to senior division girl cadets. Some of them have already gained competence in this field. Even para-jump trainings are imparted to them at Agra cantt, along with other senior division boy cadets. Senior division girls have also taken interest in rowing in rivers taught through Senior Division Naval Girls Wing.

Local camps, Zonal annual training camps, Inter-Directorate summer camps, advance Leadership camps, trekking at Himalayas, Paratro-Oping at Agra Camp , Mountaineering camps, Army attachment camps, Army horse show Delhi, All-India Nau-Sainik camps, All-India Sea trainings at Naval base and All India Vayu sainik camps at Air-force stations, are organised to provide impetus and develop corporate living amongst the youth of the country which can bring unity and infuse discipline in them. On the whole, this is the best means of developing the spirit of "National integration and brother-hood". Republic day camp, Delhi and the activities exhibited during prime Minister's Rally are the mirrors of this example. Officers cadets both junior. senior and girls from all parts of this vast country, India; including Andaman and Nicobar Islands (Bengal Directorate) and guest cadets from foreign countries participate every year in this camp.

Wide scopes are provided to both junior and senior division cadets of Army, Navy, Air Force and girl wing, to broaden their knowledge and unfold the inherent qualities in them to build as befitting citizens of the present age, moulded to take up any work unhesitatingly, in their future walk of life.

During the time of serious threat to our National security, arising from the unprovoked aggression by China; the officers and Cadets of both Senior and Junior boys and girls, enthusiastically have responded the call to the Nation given by late Prime Minister Pandit Jawaharlal Nehru; "We shall have to carry a heavy burden, all of us, whatever our vocations may be. The price of freedom will have to be paid in full measure, and no price is too grate for the freedom of our people and of our Mother land". (Massage broadcasted by the Prime Minister, Pandit Nehru on 22nd October 1962).

During this period General Cariappa, also gave the call to the youth of the Nation, to be organised and to be the men of "Grit and Gut", and show their best in this hour of National Emergency. In his speech broadcasted from All-India Radio, he quoted the words of our late brave leader Netaji Subash Chandra Bose, " ITIFAK-ETMAD-QURBANI", i. e. "UNITY-FAITH-SACRIFICE"; to be observed with all sweat blood and tears.

On this occasion, the disciplined youth of our country; the cadets of NCC have received trainings in potential Instructor cadre Trainings, Fire-fightings, Traffic control rendered assistance at Hospitals, night patrolling duties during blackouts and other civil defence activities etc. The cadets also valunteered for compulsory rifle training during this National Emergency. The National Council of University students of India (Secretariat, R-561, Shankar Road, New Delhi-5, India); came forward to combat the endless battle of freedom. Our officers and cadets associated themselves in various organisations like Territorial Army, State Homeguards, Central security forces and have rendered services voluntarily with due honesty and integrity. Enough blood were donated by many of us during the emergency for the valuable life of our jowans and officers fighting at the front.

Such response have also been shown by our cadets during the last Pakisthan aggression in 1971. During Bangladesh war-fare, our organisation was also concious of the time to time development and internal security of the Country.

Cadets at present, are still making stride to win over all problems, during National Emergency and in emergency caused by cyclone, flood, drought and other natural calamities. Keeping these factors in view, 'Social Service', have come to a great play at the present stage. So, in the training camps N.C.C. cadets are given training in various relief work.

Great encouragement in social service have been observed amongst the youth. Students enrolled in National Cadet Corps and National Service Corps (N.S.C.) have covered many rural areas of the respective States in different fields of work, like cleaning the villages, inducing hygienic living, plantation of trees, framing Co-operative Societies, implementing National savings scheme, utilising gramya (rural) banks, starting cottage industries, improving agricultural methods and modern animal husbandry practices, for better production and living, consumption of available nutritive flood setting up Gobar gas (cow dung gas) plants and other community development service etc. Vision of our vibrant youth is touching the rural and undeveloped tribal areas of the country gradually. Such endeavour of the youth, will definitely change the face of our undeveloped villages and improve the socio-economic condition of our village folk in the long run. All the State and Central Government machineries and private bodies should come forward to join hands to encourge the youth, in creating a healthy Nation. Various Extension Division agencies, should project the activities of the youth properly. Besides all these activities in progress, good number of adult cades, both boys and girls have started donating 'Blood' by the call of our Director General, N.C.C. Maj. Gen H. K., Bakshi. It is a well known fact that the shortage of 'Blood plasma', in our country is quite acute and very valuable lives are not being saved in physical emergencies of the persons. In order to make our 'Blood Bank' self sufficient, the required detailes of our able bodied youth may be maintained at the hospital and free periodical chek up of their health should be done for emergency collection of blood. Undoubtedly, this is the presious contribution of our youth, which can be contributed by them only.

N.C.C. basically being a 'youth movement'; decisions have been taken on the recommendations of the N.C.C. Evaluation committee, Government of India, Ministry of defence (recomendations issued in 1974). As per the recommendations of the committee, the aims of the N.C.C. should be:—

(i) Development of Leadership, character, comradeship, spirit of sportsmanship and the ideal of service.

The development of the 'ideal of service', would cover the social service element which has been emphasised in a recent directive by the Primenister Mrs. Indira Gandhi.

(ii) To create a force of disciplined and trained man power, which, in a national emergency could be of assistance in the in defence of the country.

(iii) To provide training for students with a view to developing in them officer like qualities, thus enabling them to obtain commission in the Armed forces.

National Cadet Corps, which has served the Nation for the last twenty eight years, have done commendable progress in all walks of life, necessary, for building the backbone of our country, 'The Youth'. N.C.C. on the other hand is a boon in disguise for the 'Nation and the youth' for correct training and guidance. The dynamic force in our youth will give life to this country and the time has come, they will give a better shape in building this Nation by strictly observing 20 point Economic Programme, of our beloved Primeinister. N.C.C. has spread the spiders web in opening enough avenues and opportunities in various disciplines and activities. N. C. C. movement has produced brave vitizens to face all challenges of Nation and this movement, at present, is also a challenge to our present day youth.

By the call of our dynamic youth leader Mr. Sanjaya Gandhi, and also by the instructions issued by the N. C. C. Directorates, the cadets have solemnly taken oath in the name of God, that they will not take any type of dowry during their marriage. Further, they will have no such feeling of caste system prevailing in our country. In addition to these, they will also try their best to eradicate illiteracy, under the social service programmes.

Our cadets never lack in their talents, only opportunity can make a man perfect and thus the opportunities may be extended to the cadets of N. C. C. certificate holders to be absorbed in different active and responsible service in Government establishments, corporations, and private enterprises.

N. C. C. courses, have been designed and oriented for employment of cadets and to suit the present day need. So, attempts are being made to include N. C. C. courses as a part of the regular curriculum of studies in the Universities.

In additions to these facilities, even scopes are given to the cadets of N. C. C. to visit the foreign countries. The publicity Department of the State Governments and the ministry of information and brodcasting, Directorate General N. C. C. and State N. C. C. Directorates, University authorities and news papers have given wide publicity of the glimpses of N. C. C. activities in India from time to time. This is a great encouragement for our youth. Besides the usual trophies received by cadets for their merits in different events and occassions; the award of N. C. C. medals and ribbons have been recommended by the Evaluation committee for institution of long service medals/ribbons having 5 years, 10 years and 15 years service rendered in N.C.C. these are meant for N.C.C. commissioned officers and N.C.C. cadet instructions. Such provison is one of the best means of providing incentive for the officers and cadets those who devote their time for the best cause of N.C.C. Orders have been issued to award 25th Independence day Anniversary medals to the eligible N.C.C. commissioned officers.

Our officer and cadet take pride to present Guards of honour to the President and Governors, Prime Minister, Chief Ministers, Central and State Ministers and other important dignitories of our country. Guard of honours have also been received by various foreign dignitories of our friendly countries, those who visited this soil at different occassions.

The prospects and achievements of N.C.C. are manifold. N.C.C. 'C' certificate holders, within the age limits of 19 to 22 years can apply for entry into India Military, Academy at Dehradun on completion of graduation and on being qualified at a service selection board, interview; the cadets are to undergo training, for one and half years at the academy. The role of 'Kunjru' and 'Mahajani' committees have given the true shape of the colourful N. C. C. existing at present. In order to popularise the N.C.C. activities, the role of State Educational directorates, head of educational institutes and of our parents are 'the maximum'. It should be geared up to the fullest extent for mobilising our youth. At this juncture, our Maj. General H. K. Bakshi, DG. N.C.C. have taken maximum interest in the Organisation of games and sports in N.C.C. through which the cadets can develop the spirit of leadership and sense of understanding in them. This is also the motto of our 'World olympics' for raising the spirit of 'International brotherhood and friendship'. Dance, Drama and other youth activities, also lead to the same goal.

In our neighbouring countries, such organisation also exists in the similar pattern. The training in N.C.C. is an asset in developing the instructional and other abilities of the cadets and officers. So, last year, in the Vice-Chancellor's conference held at Delhi, the Vice-Chancellors emphasised to channelise the youthful energy, enthusiasm and idealism in constructive fields. The method adopted for the fulfilment of this objective is to provide them with the necessary environment, atmosphere and opportunities wherein their potentialities may find exnpression in fruitful and joyous ways which may not only be satisfying to them but as well help in enriching the social and National life.

In order to invigorate the action of N.C.C. valuable decisions have also been taken in the, '43rd N.C.C. Director's conference', held at New Delhi on the last September 30th 1976, in which the defence minister Sj. Banshilal and Secretary Sj. Kohli addressed the Directors of State N.C.C.

To achieve the objectives, the strength of senior division cadets have been reduced to 4 lakhs gradually from the present strength of 6 lakhs. The strength of Naval and Air Wings are to be maintained at 12,600 and 11,6000 respectively. The junior division should be maintained almost at its present level. The strength of the junior and senior Wings of girls division be increased to 1,00,000 and 75,000 from the present strength of 67,000 and 61,000 respectively. The structure of administration and strength of N.C.C. throughout India will be reorganised by the beginning of 1976-77 training year. Age of entry has also been fixed up to be 18 years and onwards for entry in the senior division; keeping in view the newly implemented 10+2+3 educational programme of the country.

In order to revive the glory of the N.C.C. activities and as a mark of progress; the last sunday of every November is observed throughout India as 'N.C.C. DAY' N.C.C. is marching ahead step by step smoothly; embracing the energetic, young and active boys and girls in its strength every year. 'N.C.C. Silver Jubilee' have been observed during 1973-74, training year with all pomp and ceremony. Messages have been received from all quarters, top to bottom, wishing 'N.C.C.' to maintain its head high as the largest disciplined youth organisation of the country.

Let the golden words of Swami Vivekananda remind our youth, "ARISE, AWAKE AND STOP NOT UNTIL THE GOAL IS REACHED". "SATYA MEBA JAYATE, BANDE MAATAHRAM, AHIMSA PARAMA DHARMA, JAI-JAWAN JAI-KISHAN", preached by our great men, the National slogans of our country; be the guide lines for the policy of 'Non-alignment' to seek friendship of all nations. Sacrifice of our great religious and freedom fighters have enough impact on our society and youth.

N.C.C. will continue to march further ahead to safeguard the best cause of the Nation with its motto, 'DUTY AND DISCIPLINE'. That is "To obey God's orders as delivered by conscience—that is duty; to obey man's orders as issued by rightful authority that is *discipline*. The foundation of both alike is denial of self for a higher good. Unless the lesson of duty be first well learned, lesson of discipline can be but imperfectly understood".

●

1 (O) Remount and Veterinary Sqn.
N.C.C., Bhubaneswar-3.

The Union Minister of State for Defence Shri Janakiballav Patnaik, according grand ovation to Prime Minister Shrimati Gandhi at the public meeting held at Kausalyaganga on January 3, 1977

Dr. H. N. Sethna, Chairman, Atomic Energy Commission with the Chief Minister Shri Binayak Acharya and Industry Minister Shri K. C. Lenka on January 6, 1977 at Bhubaneswar

PRIME MINISTER'S 3-DAY VISIT TO ORISSA

ACCENT ON UNITY

Prime Minister Shrimati Indira Gandhi underlined the need for unity, discipline and continued fiscal growth to enable the nation to face internal and external dangers. Addressing a public meeting at Dhauli, eight kilometres from Bhubaneswar on January 3 last Shrimati Gandhi asked the people to fortify the foundation of the nation. Several thousands attended the meeting.

SCIENCE CONGRESS

Prime Minister Shrimati Indira Gandhi called upon India Scientists to remain ever watchful against the attempts of various foreign interests "to deflect us from our path". She said, "Indian technology and Indian science must spring from Indian needs and priorities". Inaugurating the 64th session of the Indian Science Congress on January 3 last at Vani Vihar Shrimati Gandhi asked the scientists to give proper attention to the needs of villagers.

AQUACULTURE TRAINING CENTRE

Prime Minister Shrimati Indira Gandhi laid the foundation stone of Freshwater Aquaculture Research and Training Centre at Kaushalyaganga near Bhubaneswar on January 3 last. Shrimati Gandhi said on the occasion that she was aware of the problems of fishermen and she would do her best to mitigate their sufferings.

TRIBAL UPLIFT

Prime Minister Shrimati Indira Gandhi on the last lap of her tour of tribal and drought-hit areas of Orissa visited Bissam-Cuttack in Koraput district. Addressing a huge public meeting on the occasion Shrimati Gandhi said efforts for tribal development had been stepped up in last four or five years. "We are trying to extend the benefits to more and more people, specially in the backward areas", she added.

PLAN IMPLEMENTATION

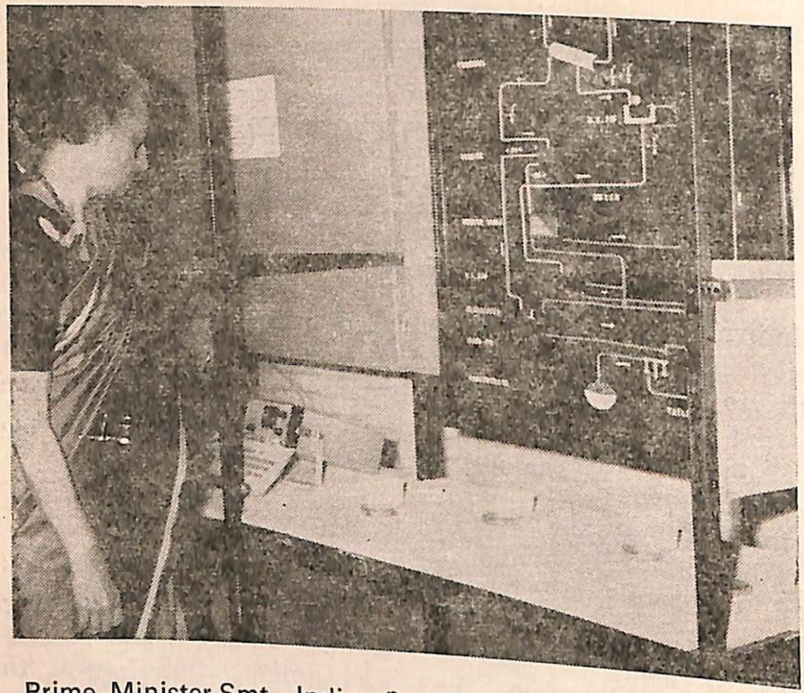
Prime Minister Shrimati Indira Gandhi addressing a mammoth public meeting at Rairangpur on January 4 last called upon the Government employees to implement the plans and programmes chalked out by the State and Central Governments with active co-operation of the people. Shrimati Gandhi expressed profound sympathy for the drought-hit people.

BANISHING POVERTY

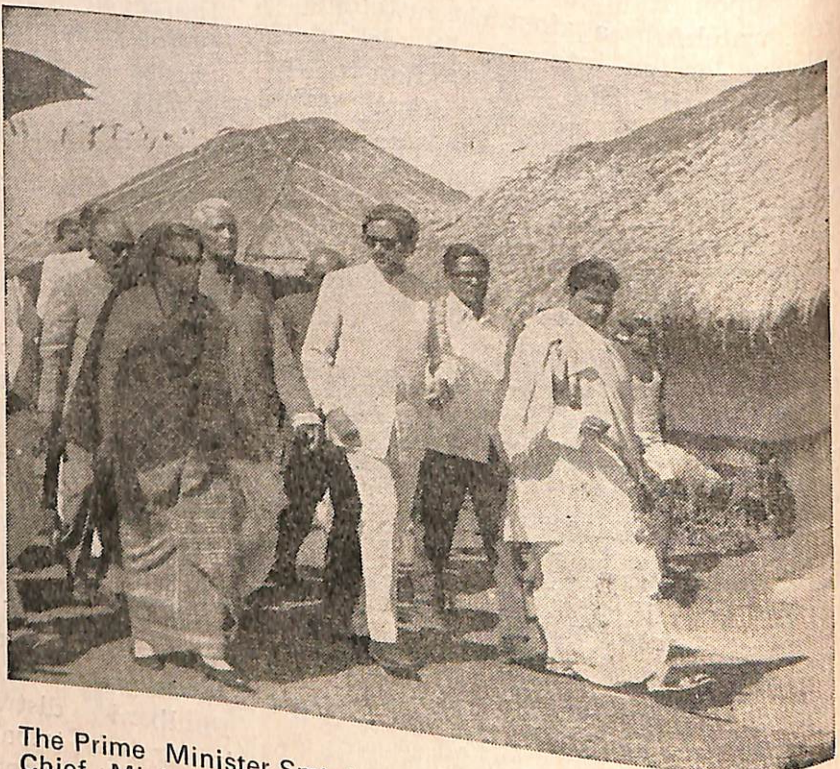
Prime Minister Shrimati Indira Gandhi addressing a mammoth meeting of Harijans and tribals at Danla in Keonjhar district on January 4 last said "Centre is keen to remove the difficulties and poverty amongst the tribals. We do not want the tribals to do away with their tradition and culture. We want to improve their lot by giving them proper education and various other facilities".

PRIME MINISTER IN TRIBAL VILLAGE

Prime Minister Shrimati Indira Gandhi was accorded a rousing reception on January 4 when she visited Burbinaju in Phulbani district to inaugurate an integrated tribal development project. Her visit generated great enthusiasm among the Khond tribes who came in hundreds to see and hear their beloved leader.



Prime Minister Smt. Indira Gandhi going round the science exhibition organised by Indian Science Congress at Vani Vihar



The Prime Minister Smt. Indira Gandhi accompanied by the Chief Minister of Orissa Shri Binayak Acharya and Union Deputy Minister for Petroleum & Chemicals, Shri C. P. Majhi going round the low-cost-housing colony at Badbila in Mayurbhanj district on January 4, 1977

Officer-in-charge of Kausalyaganga Acquaculture Centre explaining the centre's activities to Prime Minister Smt. Indira Gandhi

Prime Minister Smt. Indira Gandhi presenting Science Academy award to Dr. Priti Mohapatra

Prime Minister Smt. Gandhi watching the household materials in an Adibasi house which indicate their improved way of living in Mayurbhanj district

The Prime Minister Smt. Indira Gandhi distributing Patta to an Adivasi woman at Bissam-Cuttack in Koraput district on January 5, 1977

HUMOUR IN RARE MOMENTS

Mrs. Yashoda Bhat

It is said that if Cleopatra's nose were slightly different, it would have altered the course of history. I believe that it is not so much the nose as the rare smile on her lips that would have altered the destiny of the World. Our proud heritage informs us that our ancestors knew how to smile away their cares, even as they were engrossed in their daily round. Stories in the Panchtantra or the Upanishadic stories reveal a rare sense of humour displayed by our forbears even in the face of odds and challenges. Clowns formed part of the royal households of the past. In the "Anushasan Parva" of the Mahabharata we have the finest specimen of humour in a rare moment. When Bhishma, the grand old man of Mahabharata is lying on his death bed, a young inquisitive relation of his questions him about the bliss of married love. The old man, contemplating death, does not resent the question or the questioner. He stoops to answer—

Ways and means of humouring a hard working or tired nation should properly constitute the concern of our Five-Year Plans. It is indeed a pity it is not so. Lin Yu Tang, the master humourist of China, ardently believes that wars between nations could be averted if Walt Disney's Micky Mouse films were shown to the diplomats of these nations (very often). Countries have lost heavily for lack of a smile. Who cares for the shortage of petrol as long as we have enough of petrol to set our Thames on flams. It is often said that England would rather part with her hard-won empire than with her rarely read dramatist Shakespear. Why should we not part with all our cares for a mouthful of jokes. That American Philosopher Thoreau was in a mood to exchange his beloved home State of Massachusetts for a single copy of the Bhagavad Gita. We need not go that far. In troubled times, we can exchange frowns for smiles.

OM SHANTI !

A friend of mine, a mother of three tiny tots, used to be a picture of pity in the mornings, with all kinds of domestic chores climing her attention. Answering the persistent telephone calls, averting the spilling of milk in the kitchen and facing the jazz music of her three little ones, she would herself become a pressure cooker, boiling within and about to burst. One day as she was shouting loud without a loudspeaker her three smart children dressed in their uniforms stood before her in a line, folded their hands and chanted "Om Shanti, Shanti Shanti". The heat of the moment was at once transformed into the moonshine of laughter. The steam was off the cooker. The children had averted the doctors visit and saved his fees. James Barrie makes this interesting observation in his play 'Peter Pan'. "when the first baby laughed for the first time, the laugh broke into a thousand pieces and they all went skipping about and that was he beginning of fairies-," These fairies of the child's smile can brighten rare moments and make them worth living.

WHERE ARE IDDLIES ?

Who knows when one lands oneself in an odd situation or in a rare moment ? A Marathi writer of eminence was once standing in the balcony of his first floor flat in a multi-storeyed building in Bombay. Suddenly there was a downpour of stale sambar on him from the top floor and he was drenched in it. But not his spirits, Looking upwards, he demanded loudly: "I have enough sambar here to drown me, but where are my iddlies ?" However, a Gujurati writer faced such a situation in a totally different manner. Walking through a bylane in Bombay, he held high his umbrella even on a pleasant day so that stale sambar may not soil his clothes. Yes, he had an umbrella of humour to cover his embarrassment.

LAUGH OFF DEATH

Can anyone laugh in the face of death ? There is a very rare instance of it narrated by Laxmibai Tilak, the wife of a famous Marahti poet. In her autobiography she reveals that when her mother was on her death bed, her father sent this interesting message to her dying mother: "Wait don't die till I finish my evening prayers."

Doctors often have to face many rare anxious moments of life and death. A sense of humour either on the doctor's or the patient's side changes the scene. A patient was critically ill in a hospital ward. His doctor lost all hopes about him and wanted to do a bit of plain speaking. He said, "Sorry your case is confusing. Is there any one you would like to see ?", "Yes" replied the patient in a feeble voice. "Who is it ?" asked the anxious doctor. With a chuckle, the patient answered, "Another doctor, please." The doctor's frankness would have shocked the patient but his sense of humour not only saved him but also clinched the issue.

Pain often kills a man. But there was a rare military officer who laughed with pain in his mouth. When his abscessed tooth was extracted in the military hospital, some one asked him if it hurt him. He at once replied "It did hurt me. But it was worth it just to hear an officer tell me to open my mouth for a change." There was pain in his tooth but a twinkle in his eye.

AN ENCOUNTER

It is indeed a rare moment when there is an encounter between a genius and an ape. Humour gushed out of such moments making them part of history. A charming actress once went to the famous dramatist Bernard Shaw and suggested that if they had married, their progeny would have had her beauty and his brain making their progeny formidable indeed. But Shaw at once retorted, "But suppose they had your brain and my appearance.'

Socrates, that rare genius had his own share of rare moments in his life. His wife Xantippe was a rare commoner. Not knowing that her philosopher husband was a great thinker who was ever lost in thoughts, she once went on shouting continuously at him. When she found that there was no reaction on his part, she poured a bucket of water on his head. Socrates' retort was matchless, "So far", he said, "there was only thundering in the sky but now there is rainfall too!"

A woman once came to Dr. Johnson and questioned him as to why he had explained a particular word in a particular manner in his well-know dictionary. He at once retorted, "Ignorance, Madam, pure ignorance." But when Alexander Dumas lost patience over his servant who was not respectful he shouted, "My God are you mad, or am I?" "Ah, Sir", said the cool headed servant, "surely, you would not hire a servant who is mad.".

RAINBOW OF JOY

Often, however, rare moments need a cool and calm acceptance of everything. To avoid tears, one laughs, but the sunshine of laughter and the tears of sorrow mingle to produce a magnificent rainbow of human joy. A story is told of an old fisherwoman whose four sons were drowned in the sea. When her fifth son was also drowned in the same fashion, she laughed and quietly said, "There is nothing else the sea can do to me now!"

Sublimity was at its height when on a rare day, a gentleman lost jewellery worth ten thousand rupees. The entire locality came to console him. But he laughed and said "The jewellery has gone into hands that needed it. It has served its purpose in my wife's life. She needs it no more." Those who came to console went away consoled and with a smile on their lips.

When rare moments stare us in the face that shinning episode in the life of the British Ambassador Whitelocke should inspire us. When Mr. Whitelocke, the British Ambassador was restless and sleepless in his bed worrying about the state of affairs in England, his old servant addressed him thus: "Sir, may I ask you a question ?"

Surely", said the Ambassador. "Sir, did God govern the world well before you came into ?"

"Undoubtedly", replied the Ambassador.

"And will He rule the world well when you have gone out of it ?"

"Undoubtedly", replied the worried Ambassador.

"Then, sir, can you not trust Him to rule the world well when you are in it ?"

The tired Ambassador turned on his side and slept.

Readers, a rare moment in my life is coming to an end. I have tried to humour this rare moment. Incidentally have I also humoured you ?

(Extract of 'Akashvani', dated the 5th September, 1976)

Shri Kanhu Charan Lenka, Minister for Industries & Commerce distributing clothes and financial assistance at Birachintamonipur of Tangi-Choudwar Block to the villagers affected by fire havocon January 8, 1977

THE BAN OF DOWRY SYSTEM

Mrs. Shyamala Krishna

In early times in our society parents expressed their genuine and spontaneous affection for their daughter to be married through voluntarily given gifts at the time of her wedding. Such offers also provided, to some extent, material security for the girl after she entered her husband's home. These presents were always in the form of money, jewels or other expense and useful items which constituted an appreciable portion of her family wealth. This donation by the parents for the welfare of their daughter in her married life was then called Stridhana. Today the same act of donation persists in full swing and, often regretably, as a compulsory function to bring about a successful matrimonial alliance of the women in our country. And now it goes by a different name, being known as dowry. Unfortunately, all the goodwill and affection which, once upon a time, formed the laudable foundation of this noble deed have now been miserably damaged. Dowry has now become a painful and socially frightening word badly disturbing the peace and tranquility of many an Indian family.

VICIOUS SYSTEM

Although several people now-a-days vehemently critise the dowry custom, our womenfolk still seem to be very much caught up in this vicious system with little hope of redemption in the near future. The lust for money and associated material wealth by man provoke him to put forth before the father of the prospective bride a heavy and ugly demand for dowry and stipulates it as a prerequisite for accepting to marry the girl. In many homes the girl's parernts have to give away all that they posses to fulfil this demand, thus leading them to a point of almost bankruptcy. Failure to concede to this demand results in an abrupt termination of matrimonial negotiations by the groom's people with the concerned bride's party. Very often the helplessness of the parents to pay adequate dowries force them to get their daughters recruited in nurseries and hospitals where they exist throughout their lives as unmarried women. In middle class homes the daughters are sent for employment not for providing additional income for the families but for chiefly earning their own dowry.

UNHAPPY CONSEQUENCES

The inability of the daughter's guardians to satisfy, at a later mutually agreed period, the promised dowry requirement of their newly acquired son-in-law also brings about unhappy vulgar or even fatal consequences for their own girl in her wedded life. The young woman, who once was a symbol of optimism and keenly looked forward to an enjoyable and respectable martial status, soon becomes a target of awkward humiliation by all members of her husband's home for the folly of her parents in not sticking to the dowry commitment. A sort of revenge is taken on her by her life partner and his subjecting the innocent girl to undergo a more or less constant state of psychological torture easily gets translated into physical torture and the girl is either murdered or she commits suicide out of sheer frustration.

All these events connected with marriage are shocking and deplorable. Marriage is a sacred institution where the hearts of two loving individuals are formally united. Its sanctity should never be destroyed by commercialisation brought about through a greed for money or for any form of material wealth. The status of women in our society should always be held in high esteem. Her position and welfare as a bride in an Indian family should be a matter of great concern and importance. We should never entertain the thought of considering her as a commodity bought in a marriage deal. The insistence on receiving a dowry for completing a successful matrimonial alliance between sons and daughters of our nation would undoubtedly not help us to develop this healthy attitude about our marriageable girls.

It is, therefore, very imperative that we now hasten to take some positive steps to effectively put down the practice of offering or accepting dowry in our weddings. Our citizens should be made to recognise the fact that dowry system is a social and national curse that has penetrated into all castes and creeds. So this curse must be eradicated for ever. A vigorous and sustained anti-dowry campaign must be on at the national level to uproot this evil in our society. Both the Government and private social organisations can play a very important role to achieve this goal for the welfare of our people as a whole. We already have a Dowry Prohibition Act operating as a legal force since 1961. The effectiveness of this Act should now be enhanced by treating dowry as an illegal gratification and by indiscriminately prohibiting the offer of any form of 'gift of affection' beyond a certain reasonable limit to the bridegroom. Above all, mothers who have marriageable sons should take a pledge not to accept any kind of dowry and should boldly come forward and implement this pledge by actually obtaining dowryless daughters-in-law for their families. An integrated and co-operative effort by all of us along these lines would certainly pave the way for banishing the present dowry system, a bane of society, permanently from the Indian community. This message becomes all the more significant and relevant for us especially when we had just finished observing an International Women's Year and a decision has been taken by the United Nations to dedicate the next decade to the fair sex.

(A.I.R., Gorakhpur)
Akashvani

CALENDAR OF EVENTS

NOVEMBER 1976

1-11-1976	Shri Bramhananda Biswal, Minister for Fisheries inaugurates an aquarium at Nandan Kanan near Bhubaneswar.
3-11-1976	Orissa Government decides to set up a Handloom Development Corporation for boosting export of handloom fabrics from Orissa.
5-11-1976	Loksabha adopts bill to extend its term by one more year. (Extension of Duration Amendment Bill, 1976) (Extended up to 18-3-1977).
9-11-1976	Chief Minister Shrimati Nandini Satpathy inaugurates a Children Home for orphans at Baripada.
11-11-1976	Union Government decides to locate a Unit of Hindustan Machine Tools in Orissa for manufacturing watch components.
	Orissa Government takes up a rehabilitation Scheme for the semi-nomadic tribe Lodhas at Mayurbhanj district to settle them down in agriculture. (A. B. P.)
12-11-1976	Rajya Sabha adopts the constitution (44th Amendment) Bill.
13-11-1976	President of India gives assent to the Orissa Land Reforms (Second Amendment) Bill, 1976.
	State Bank of India opens its second Regional Rural Bank in Koraput district.
14-11-1976	Chief Minister Shrimati Nandini Satpathy, inaugurates the first working Women's Hostel "Nivedita" put up at a cost of Rs. 6·15 lakhs at Bhubaneswar.
17-11-1976	The Union Minister of State for Supply and Co-operation Shri A. C. George visits Bhubaneswar.
18-11-1976	Orissa Government decides to sink tube wells to supply drinking water to six hundred villages in draught hit areas of the State.
	Orissa Minister for Agriculture, Co-operation, Rural Development and Works, Shri Lakshman Mallick resigns from the State Cabinet.
19-11-1976	Shrimati Prabhamayee Devi, a Social Worker passes away.
	Shri Mohan Naik, Minister of State for Community Development and Social Welfare elevated to cabinet rank.
20-11-1976	Shri Debendra Chandra Mishra takes over as Vice-Chancellor of Sambalpur University.
21-11-1976	The All-India Congress Committee Session begins at Gauhati.

26-11-1976 The Union Ministry of Agriculture and Irrigation organise an All-India Banana Show at Soochana Bhawan, Bhabaneswar incollaboration with the Orissa State Government.

27-11-1976 Chief Minister Shrimati Nandini Satpathy appoints five Ministers of State as Cabinet Ministers, one Deputy Minister as Minister of State and re-allocates the departments among the members of her council of Ministers.

28-11-1976 Orissa Minister for Supply, Forests, Fisheries and Animal Husbandry inaugurates the first Eastern Zone Fine Arts Exhibition at Rourkela.

29-11-1976 Orissa Cabinet decides to exempt Sales Tax on Tassar cocoons.

DECEMBER 1976

1-12-1976 Orissa Agricultural Credit Operations and Miscellaneous Provisions (Banks) Act, 1975 comes into force.

Orissa Government decides to open five more Fire Stations at Koraput, Nawarangpur, Padampur, Daspalla and Balugaon.

Professor Dr. Gautam Mathur becomes Vice-Chancellor of Utkal University.

Bhubaneswar branch of Reserve Bank of India opens a claim section to deal with mutilated and defective notes.

2-12-1976 The Banking Commission members under the leadership of former Union Minister Shri Manubhai Saha visit Bhubaneswar.

Chief Minister of Assam Shri Sarat Chandra Sinha visits Bhubaneswar.

The Marine Products Export Development Authority, Calcutta, decides to instal a 500 tonne capacity cold storage plant at Paradeep.

3-12-1976 All India Indo-GDR Friendship Association helds its national conference at Barabati Stadium, Cuttack.

5-12-1976 Chief Minister Shrimati Nandini Satapathy lays the foundation stone of a creche at Satyanagar, Bhubaneswar.

Union Minister for Labour Shri K. V. Raghunath Reddy visits Bhubaneswar.

6-12-1976 The Orissa Assembly ratifies the Constitution (44th Amendment) Bill as adopted by the Parliament.

7-12-1976 1·5 crore people suffer due to draught situation in the State.

11-12-1976 Chief Minister Shrimati Nandini Satapathy inaugurates a branch of the Corporation Bank at Cuttack.

Shri Ali Yavar Jung, Governor of Maharastra State passes away.

16-12-1976 Chief Minister Shrimati Nandini Satapathy resigns from Chief Ministership of Orissa. The State comes under President's Rule. Orissa Legislative Assembly kept under animated suspension.

The Union Government appoints Shri M. Ramakrishneya, Secretary in the Union Minister of Shipping and Transport as Advisor to Governor of Orissa.

18-12-1976 Prime Minister Shrimati Indira Gandhi grants Rs. 5 lakhs from the National Relief Fund for the draught affected people of Orissa.

19-12-1976 President Shri F. A. Ahmed gives assent to the Constitution 42nd Amendment Bill, 1976.

23-12-1976	Prime Minister Shrimati Indira Gahdhi reshuffles her Council of Ministers Shri Rajbahadur, Union Cabinet Minister for Civil Aviation and Tourism resigns.
	Prime Minister Shrimati Indira Gandhi appoints Shri Hitendra Desai and Shri Debi Prasad Chattopadhya as Cabinet Ministers and Shri V. P. Singh, Shri Janakiballav Patnaik as Ministers of State and Shri Birabhadra Singh as Deputy Minister in the Union Council of Ministers.
24-12-1976	A 16-Member Congress Ministry under the leadership of Shri Madhab Singh Solanki takes oath of office and secrecy in Gujarat.
	Shri J. B. Patnaik, Union Minister of State for Defence lays the foundation stone of the Training Blocks of the Naval Boys Centre at Chilika in Puri district.
26-12-1976	Shrimati Nandini Satapathy resigns from the leadership of Orissa Assembly Congress Legislature Party. Orissa Assembly Congress Legislature Party elects Shri Binayak Acharya as its new leader.
29-12-1976	A 14-member three-tier Congress Ministry under the leadership of Shri Binayak Acharya swears-in at Bhubaneswar.
30-12-1976	The Governor of Orissa allocates business of different Departments of Government among the members of the Cauncil of Ministers as per the advice of the Chief Minister.

Progress in the field of Homoeopathy and Ayurvedic Medicine in Orissa

The Indian System of Medicines and Homoeopathy are comparatively cheaper and are within the easy reach of the poorer sections of the people. The various developmental projects/programmes which have been put into operation by now are briefly indicated below :

I. Education

For development of the system, 2 colleges—one for Ayurvedic and another for Homoeopathic have also been established which are imparting degree and diploma courses of studies respectively. Post-graduate courses of studies and Degree courses of studies are going to be introduced in the Gopabandhu Ayurvedic Mahavidyalaya, Puri and the Government Homoeopathic Medical College, Bhubaneswar respectively with effect from the year 1976. The post-graduate course of study in Ayurveda at Gopabandhu Ayurvedic Mahavidyalaya, Puri will receive Central assistance.

II. Peripheral services

(a) *Hospitals*—There are 3 Ayurvedic Hospitals, one attached to the Gopabandhu Ayurvedic Mahavidyalaya, Puri with 80 beds; another at Bhubaneswar with 30 beds, and the other at Balangir with 30 beds. There are 2 Homoeopathic Hospitals—one with 24 beds attached to the Government Homoeopathic Medical College at Bhubaneswar and the other with 24 beds attached to the Co-operative College at Berhampur.

The Co-operative College at Berhampur is established on Co-operative basis and is receiving grant-in-aid both from the Government of India and the State Government.

(b) *Dispensaries*—In order to provide these types of medical facilities, the State Government have opened so far 212 Ayurvedic, 138 Homoeopathic and 1 Unani Dispensaries which are spread all over the State. To run these institutions, each Ayurvedic Dispensary is provided with 1 Kaviraj, 1 servant and 1 part-time Sweeper-*cum*-Watchman and each Homoeopathic Dispensary with one Medical Officer (H), 1 Distributor and 1 part-time Sweeper-*cum*-Watchman.

(c) *Pharmacy*—There is an Ayurvedic Pharmacy at Balangir for manufacturing Ayurvedic Medicines for supply to the Ayurvedic Dispensaries and Hospitals. Another Ayurvedic Pharmacy is attached to Gopabandhu Ayurvedic Mahavidyalaya, Puri for supply of drugs to the attached teaching hospital.

There is Herbal Garden for cultivation of herbal medicinal plants to feed the pharmacy.

III. Administrative set up

For proper supervision of Ayurvedic Dispensaries there are 3 Circle Inspectors viz.—Eastern, Western, Central with headquarters at Bhubaneswar, Balangir, Keonjhar, respectively, and for Homoeopathic Dispensaries, there is one Chief Medical Officer to supervise the work of homoeopathic Medical Officers.

2. The State Government have decided to reorganise the administrative set up by appointing two more Inspectors in Homoeopathic wing and a Superintendent of Homoeopathy to replace the Chief Medical Officer (Homoeopathy).

3. There is a State Council and a State Faculty of Ayurvedic Medicines and a State Board of Homoeopathy for development of these System of Medicines.

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The Prime Minister, Smt. Indira Gandhi is being received by the Chief Minister, Shri Binayak Acharya and the Union Minister of State for Defence, Shri J. B. Pattnaik on her arrival in Orissa on January 3, 1977

Our Chief Minister, Shri Binayak Acharya presenting a filigree work to Prime Minister Smt. Indira Gandhi

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PEACE DAWNS ON FAMILY
THAT IS SMALL
IN PLENTY AND PLEASURE
LIVE ALL.

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WHEN YOU PLANT A SAPPLING
PLANT LOVE ON EARTH,
WHEN YOU HEW THE TREES
ROB THE LAND OF MIRTH.

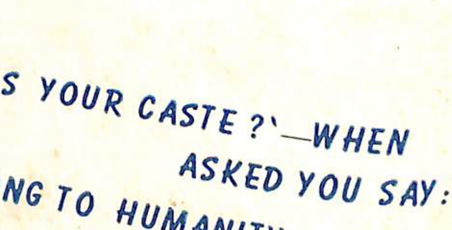
* *

TAINTS THEM BLEMISH
WHO TAKE OR OFFER
DOWRY, THE VILEST SOCIAL
CANKER.

* *

LEARN TO READ
AND LEARN TO WRITE
FILL YOUR HEART
WITH NEW LIGHT.

* *



'WHAT'S YOUR CASTE ?'—WHEN
ASKED YOU SAY:
'I BELONG TO HUMANITY
THE CASTE THAT STAY'.

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